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AUTHOR Freedson, Patty S., Ed.; Moffatt, Robert J., Ed.
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ABSTRACT

This compilation lists research completed in the areas of health, physical education, recreation, dance, and allied areas during 1985. In the first section references are arranged under the subject area headings in alphabetical order. Master's and doctor's theses from institutions offering graduate programs in health, physical education, recreation, dance, and allied are then presented. Institutions reporting are listed at the end of the volume. Most references are accompanied by abstracts of the research, and all are numbered in alphabetical order according to institution. Names of institutional representatives sending in abstracts are indicated in parentheses after each reference. A bibliography lists published research citing articles published in periodicals reviewed for this booklet. (JD)

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VOLUME 28, 1986

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In Health, Physical Education, Recreation & Dance
Including International Sources

VOLUME 28-1986 EDITION

COMPLETED RESEARCH

In Health, Physical Education, Recreation & Dance

Including International Sources

Covering Research Completed in 1985

Edited by PATTY S. FREEDSON and ROBERT J. MOFFATT
for the RESEARCH CONSORTIUM of the
AMERICAN ALLIANCE FOR HEALTH, PHYSICAL EDUCATION,
RECREATION AND DANCE.

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Purposes of the American Alliance For Health, Physical Education, Recreation and Dance

The American Alliance is an educational organization, structured for the purposes of supporting, encouraging, and providing assistance to member groups and their personnel throughout the nation as they seek to initiate, develop, and conduct programs in health, leisure, and movement-related activities for the enrichment of human life.

Alliance objectives include:

1. Professional growth and development—to support, encourage, and provide guidance in the development and conduct of programs in health, leisure, and movement-related activities which are based on the needs, interests, and inherent capacities of the individual in today's society.
2. Communication—to facilitate public and professional understanding and appreciation of the importance and value of health, leisure, and movement-related activities as they contribute toward human well-being.
3. Research—to encourage and facilitate research which will enrich the depth and scope of health, leisure, and movement-related activities; and to disseminate the findings to the profession and other interested and concerned publics.
4. Standards and guidelines—to further the continuous development and evaluation of standards within the profession for personnel and programs in health, leisure, and movement-related activities.
5. Public affairs—to coordinate and administer a planned program of professional, public, and governmental relations that will improve education in areas of health, leisure, and movement-related activities.
6. To conduct such other activities as shall be approved by the Board of Governors and the Alliance Assembly, provided that the Alliance shall not engage in any activity which would be inconsistent with the status of an educational and charitable organization as defined in Section 501(c) (3) of the Internal Revenue Code of 1954 or any successor provision thereto, and none of the said purposes shall at any time be deemed or construed to be purposes other than the public benefit purposes and objectives consistent with such educational and charitable status.

Bylaws, Article III

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INTRODUCTION

This compilation lists research completed in the areas of health, physical education, recreation, dance, and allied areas during 1985. It is arranged in four parts.

I. **Index to Abstracts.** In this section, references are arranged under the subject headings in alphabetical order. Instructions for using the index are given at the top of page 1.

II. **Theses Abstracts.** These are master's and doctor's theses from institutions offering graduate programs in health, physical education, recreation, dance, and allied areas. Institutions reporting are listed on pages 253 through 256. Most references are accompanied by abstracts of the research, and all are numbered in alphabetical order according to institution. Names of institutional representatives sending in theses abstracts are indicated in parentheses after the names of the institution; major professors are in parentheses after each reference.

III. **Bibliography.** This is a listing of published research, citing articles published in periodicals relevant to Health, Physical Education, Recreation, and Dance reviewed for *Completed Research*.

Universities and colleges are encouraged to submit abstracts of theses completed at their institutions for inclusion in the next issue of *Completed Research*. Material should be sent to Patty S. Freedson, Chairman of Theses Abstracts.

Patty S. Freedson
Robert J. Moffatt
Editors, Completed Research

ABBREVIATIONS APPEARING IN THESES ABSTRACTS

AAHPERD = American Alliance for Health, Physical Education, Recreation and Dance (abbreviate all familiar organizations, e.g., AAU, NCAA, etc.)
acd = academic or academically
AD = athletic director
admin = administration
AE = absolute error
anal = analysis or analyses
ANCOVA = analysis of covariance
ANOVA = analysis of variance
assoc = association or associated
ATPase = adenosine triphosphate
BB = basketball
bf = body fat
BP = blood pressure
BTPS = body temperature pressure saturated
bw = body weight
C = centigrade
CA = chronological age
CE = constant error
CG = center of gravity
chem = chemical
chol = cholesterol
CO = county
CO_2 = carbon dioxide
coll = college or colleges
curr = curriculum
DBP = diastolic blood pressure
o = degree
DEPT = department
dev = develop or developmental
diff = difference, differences, differentiate or difficult
educ = education
EKG = electrocardiogram
ELE = elementary
EMG = electromyogram
EMR = educable mentally retarded
exp = experiment, experimental or experience
F = Fahrenheit, F ratio, female or females
fed = federal
FEV_1 = forced expiratory volume
fit = fitness

gm = gram
govt = government
gp = group
GPA = grade point average
gr = group
grad = graduate
HC = handicapped
HE = health education, health
HR = heart rate
ht = height
IEMG = integrated electromyographic activity
insig = insignificance or insignificant
IQ = intelligence quotient
JC = junior college
JHS = junior high school(s)
JV = junior varsity
kg = kilogram
kg/m = kilogram per meter
kpm/min = kilopondmeter per minute
KR = knowledge of results
LD = learning disability
lit = literature
M = mean, male or males
MA = mental age
max = maximum or miximal
meas = measure
mf = motor fitness
MMR = mildly mentally retarded
mph = miles per hour
MR = mental retardation
MS = middle school
msec = millisecond(s)
MT = movement time
mvmt = movement
n = number (e.g., of Ss) all numbers in arabic form (e.g., 1 = one, 5 = five, 100 = one hundred)
N_2 = nitrogen
natl = national
neg = negative
no. = number (in text, e.g., the total no. of days. . .)
O_2 = oxygen
% = percent
P = probability ($p < .05$ = significance greater than .05 level; $p > .01$ = nonsignificance at the .01 level)

PE = physical education
PH = public health
PR = pulse rate
prog = program
psi = pounds per square inch
pt = point
PWC_{170} = physical work capacity, PWC (level of HR unspecified)
Q = cardiac output
r = correlation
REC = recreation
rep = repetition or repetitions
RPE = rate of perceived exertion
RPP = rate pressure product
rpm = revolutions/min
RT = reaction time
RV = residual lung volume
S = subject, S's = subject's (possessive); Ss = subjects
SBP = systolic blood pressure
SD = standard deviation
SHS = senior high school(s)
sig = significant or significance
sq = square
st = state
stdnt = student
STPD = standard temperature pressure dry
SV = stroke volume
t = t-ratio
tchr = teacher
temp = temperature
TMR = trainable mentally retarded
TRT = total response time (RT + MT)
univ = university or universities
US = United States
USSR = Union of Soviet Socialist Republics
VE = variable error
V_E = expired ventilation
VO_2 = oxygen consumption
vol = volume
V_T = tidal volume
wt = weight
x_2 = times
x^2 = chi square
YMCA = Young Men's Christian Association

YMHA = Young Men's Hebrew Association
YWCA = Young Women's Christian Association

NOTE:

1. Measurements are abbreviated (without periods) such as:
   in = inch; sec = second; wk = week; hr = hour;
   m = meter; ml = milliliter; mm = millimeter;
   min = minute; mo = month; oz = ounce; yd = yard, etc.
2. Whenever possible, performance tests are abbreviated (e.g., CPI = California Psychological Inventory; Cattell 16 PF = Cattell 16 Personality Factor Questionnaire; MMPI = Minnesota Multiphasic Personality Inventory)

3. U.S. Postal Service abbreviations are used for states (e.g., AL = Alabama)

INDEX TO ABSTRACTS

This index enables the reader to refer to the items of completed research listed in the Theses Abstracts. Research topics are arranged in alphabetical order. The reference number following each topic corresponds to the listings of completed research dealing with that topic in the Theses Abstracts.

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ARIZONA STATE UNIVERSITY (K. Loper)
TEMPE, ARIZONA

1. EOFF, N.L. The relationship of structural-maturational variables to throwing performance. Ph.D. in Secondary Education, 1985, 101 p. (J.W. Bell and R. P. Pangrazi)

The relationship of 4 structural-maturational (SM) variables to 4 measures of throwing performance was examined in light of sex diffs and developmental diffs. SM variables were ht, wt, arm length, and subcutaneous fat. The 4 throwing measures used to identify throwing ability were velocity, distance, accuracy, and quality of throwing form. Velocity was measured with a radar gun. Distance throws were completed using AAHPERD test standards. Accuracy consisted of 10 throws each at 2 distances. Two raters assessed throwing form from video tapes of velocity throws. A test devised by Mosher and Schutz (1983) was used to rate each Ss developmental level. Ss were 146 1st and 4th graders participating in an ELE PE program. MANOVA results indicated that there were sig grade and gender diffs on throwing performance variables and SM variables. Sig canonical correlation results indicated that there was a relationship between arm length and the throwing composite for 1st grade girls. A sig relationship was found between the 2 SM variables of arm length and wt and the throwing composite for 4th grade boys. Multivariate multiple regression analysis results indicated that the set of SM variables was a sig predictor of distance throwing for 1st and 4th grade boys. There were no sig relationships between the throwing composite and SM set. These results indicate that individual SM variables contributed to a mechanical advantage in throwing, but that as a composite, SM variables are not related to diffs in throwing performance between boys and girls.

CALIFORNIA STATE UNIVERSITY (W. Bynum)
SACRAMENTO, CALIFORNIA

2. ENGLESE-DELLASERRA, F. A comparison between accumulated playing time and academic performance among female high school basketball players. M.A. in Physical Education, 1985, 100 p. (S.K. Figler)

This study determined whether the degree of team involvement, measured by playing time, influenced the academic performance of HS varsity female basketball players within the

Metropolitan League of Sacramento, CA. Ss (n=36) were divided into "regular" and "non-regular" groups based upon the no. of mins played during the first 20 games of the 1982-1983 season. Data collected from 8 schools included game statistics books, interscholastic sports teams records, academic records, quarter report cards and lists of course requirements. Academic performance was assessed by a comparison of 11 GPA (cumulative, in-season, out-of-season, required course, elective course, math, history, physical education, English, social science and science) and 10 course load (average number of elective and required courses among groups and within each of the 4 class levels) hypotheses between "regular" and "non-regular" players. Results of the Mann-Whitney Rank Sum Test indicated "regular" players scoring sig higher (p=.05) than "non-regulars" in the elective course GPA. "Non-regular" players scored sig higher (p=.05) in the average no. of elective and required courses taken. Results led to the conclusion that degree of team involvement had an influence upon the academic performance of athletes in only 3 of 21 GPA comparisons.

3. RUTLEDGE. J.T. Blood pressure of the borderline hypertensive in selected submaximal exercises. M.A. in Physical Education, 1985, 73 p. (W.A. Bynum)

14 borderline hypertensives (>140mm Hg and/or>90mm Hg) ages 24 to 64 years performed 3 exercise sessions, one each of walking, jogging, and stationary bicycling within a 1 month period. The sessions were 20 min at a target HR that was 70% of their previously determined max HR using a max treadmill test and the Karvonen formula as guidelines for determination. During each bout HR was monitored every min, and BP every 2 min. The data for analysis was taken from a 13 min steady-state period from within the 20 min session. Resting group M for BP was 134/93. Walking, jogging and stationary bicycling M during steady-state were 167/82, 165/83, 184/92, respectively. Jogging and walking exhibited similar positive cardiovascular stress to the borderline hypertensives during the steady-state period. Stationary bicycling exhibited higher BP thus, higher resistance forces within the peripheral arterial vessels. Double product resting M was 108 and 247, 252, and 271 respectively in each exercise. This, too, points at an increased workload of the heart at the same target HR. Therefore, the type of exercise prescribed to borderline hypertensives should be considered as part of the step care approach to treatment.

4. WILLETT, J.A. A case study of exercise, diet and menstrual function of female body builders. M.A. in Physical Education/Fitness Management, 1985, (K. Scarborough)

5 competitive female body builders were studied for approximately 10 mo to assess the effects of pre-contest, contest and post-contest diet and exercise training on menstrual function. The variables studied included body wt, body composition, diet, exercise and menstrual function. Information regarding exercise and menstrual history was obtained from a questionnaire. Hydrostatic body composition testing was administered 3-4 mo prior to each Ss contest, 48-72 hrs before the contest and 2-3 mo following each Ss contest. During the 10 mo, each S maintained a log making weekly entries concerning body wt, exercise regimen, diet and menstrual function. The questionnaire indicated that 3 out of 5 Ss were physically active since childhood, and all Ss menstruated a regular 27-30 day cycle with the exception of 2Ss who reported missed periods during training for a prior competition. 3 out of 5 Ss became irregular during the study. Findings indicated that the Ss who maintained a higher level of exercise training, consumed fewer calories and maintained a lower calorie diet for a longer time lost the greatest amount of body wt, body fat and lean body wt, and experienced menstrual irregularities. Wt gain following the contest for each of the irregular Ss was greater, as well. These results support the theory that large fluctuations in body wt and body composition in relatively short periods of time resulting from heavy exercise and dieting are associated with menstrual irregularities.

COLUMBIA UNIVERSITY (B. Gutin)
NEW YORK, NEW YORK

5. CHUNG, T.B. A descriptive study of teaching physical fitness: time-on-task in a non-school setting. Ed.D. in Movement Sciences and Education, 1986, 190 p. (W.G. Anderson)

To describe student time-on-task in the specific context and for the specific content of "The Y's Way to Physical Fitness" programs, this study both developed and used a new descriptive instrument, the "Time-On-Fitness Instrument (TOFI)." It consists of 9 exhaustive and mutually exclusive activity

categories in 4 major divisions and records behavior at 5-second intervals during alternate 1-min class segments and was used to observe 410 adult students in 46 classes over 8-10 wks at 5 different YMCAs. Field notes and interviews provided additional data. Analysis of the data (14,760 intervals) indicated that 65.1% of class time was spent in Active Fitness (43.7%, "Strength/Stretch", 21.4%, "cardiovascular"), 20.4% in Transitional Fitness (11.3%, Warm-Up, 9.1%, "Cool-Off"); 4.9% in Passive Fitness (2.5%, "Rest"; 2.4%, "Knowledge") and 9.6% in Non-Fitness (6.8%, "Management"; 1%, "Wait", 1.8%, "Other"). The data confirmed that these students were mostly on task (90.4% on the fitness objective) and were active physically (85.5%). Less time was observed in cardiovascular exercise (21.4%) than recommended (32.6%) and much more on strength (43.7%) than recommended (18.8%). The TOFI, shown to be valid, reliable, and easily used, represents a straightforward approach to the design of context- and content-specific descriptive instruments and studies.

6. LARKIN, J.D. Kinematic profiles of the hands in a bimanual task: a study of movement asymmetry. Ed.D. in Motor Learning, 1985, 84 p. (J.R. Higgins)

The effect of asymmetric experience on bimanual performance was examined using a forearm supination and pronation task. 30 right handed women (20-45 yrs) were randomly assigned to one of 3 exp conditions: left hand training; right hand training; or bimanual training. Movement asymmetries were demonstrated by a lack of equivalence in the kinematic profiles of the hands during bimanual performance. ANOVA of the bimanual performance indicated that the left trained group demonstrated training effects for measures of peak velocity, and response latency for the left hand. The right trained group showed a response to training with a higher peak velocity with the right hand. The bimanual control group did not demonstrate any clear asymmetries. Relatively stable asymmetries independent of the direction of training were manifest by a shorter movement time and displacement for the right hand, and a shorter reversal time on the left hand. The hands moved toward a more equivalent performance with extra experience on the bimanual task. Thus, relatively stable asymmetries were considered to represent adjustable functional differences between the hands resulting from their independent histories, the left hand as a stabilizer and the right as a dynamic mover.

7. VEAL, M.L. A descriptive study of pupil assessment in secondary physical education. Ed.D. in Curriculum and Teaching Physical Education, 1986, 159 p. (W.G. Anderson)

The pupil assessment practices and perceptions of 13 teachers in 6 school districts were described, using formal and informal interviews, observation of classes, and document reviews. The 6 directors of physical education were also interviewed in order to describe their perceptions of pupil assessment. A theoretical framework guided data collection and analysis. Five themes emerged from the perceptions of teachers: effort, improvement, individualization, purpose/utility, and efficiency. Assessment practices were summarized into a frequency index of instances of assessment by teacher, activity, types of assessment, and phases of assessment. Of the 90 reported instances, 16% was preassessment, 30% was formative, and 54% was summative. Subsequent to a comparison of theory and practice, several recommendations for change were made. First, there should be an emphasis on assessment rather than evaluation during professional preparation of teachers, which may serve to separate the concept of assessment from tests and grades. Second, an increase in formative assessment was suggested, particularly for high school students. Third, teachers should place the emphasis on tracking student progress and improvement, rather than on tests and grades. Last, and perhaps most importantly, administrators must communicate to teachers an expectation that they are accountable for tracking the progress of students.

EAST STROUDSBURG UNIVERSITY (J. Felshin)
EAST STROUDSBURG, PENNSYLVANIA

8. GRAHAM, R.F. A study of the Pocono Hospital Health and Fitness Program. M.S. in Exercise Science, 1986, 104 p. (H. Weber)

Data from 211 males and 169 females (18-76 years) were examined normatively and longitudinally relative to aerobic fitness, blood lipids, and body composition. Values measured upon program entry were grouped by age and gender and developed into quartiles, M, range, and SD. Repeated measures (2, 3, and 4 sequences) were longitudinally analyzed. Results demonstrated acceptable values upon program entry in: percent body fat (PBF) by 27.8% of males, 43.9% of females; total cholesterol (TC) by 55.6% of males, 62.4% of females; triglycerides (TRI) by 77.6% of males, 96.5% of females; high density lipoproteins

(HDL) by 82.2% of males, 95.6% of females; at least average fitness by 96.6% of males, 84.7% of females, with 2 males and 1 female demonstrating low fitness and 42 males and 6 females demonstrating high fitness. Longitudinal examination of aerobic fitness (Predicted Maximal MET Levels) was statistically sig at the .05 level in 3 male groups and the 3-sequence female group. Longitudinal examination of TC, HDL, TC/HDL Ratio, TRI, and PBF data resulted in no statistical sig at the .05 level.

9. KIMBROUGH, C.M. An analysis of knowledge and application of exercise training principles among a population of adult joggers. M.S. in Physical Education, 1984, 68 p. (H. Weber)

A written questionnaire was completed by 50 men and 25 women between the ages of 20 and 60 yrs describing their jogging programs, assessing their basic knowledge and use of exercise training principles, and comparing their actual frequency and duration of exercise to recommendations made by ACSM. Resting and typical jogging HR were measured to determine intensity of exercise based on maximum HR reserve for comparison with ACSM guidelines. Results demonstrated that 45% of Ss jogged 3-5 times per wk with 84% jogging for 30 to 45 min at a M intensity of 79% of max HR reserve 75% did not monitor their exercise HR and 43% exercised for health reasons. 96% knew that aerobic exercise is best for fitness, 84% knew that the duration of exercise should be between 15 to 60 min and 73% knew that the frequency of exercise should be 3-5 days per wk. 56% correctly identified the recommended range of intensity. For intensity and duration of exercise, 87% and 84%, respectively, fell within recommended ACSM guidelines while 45% adhered to frequency recommendations. Most Ss trained within ACSM guidelines but did not check their exercise HR to monitor intensity.

10. SHEWOKIS, P.A. A study of the relationship between selected anthropometric and strength measurements and bat swing velocity of female high school softball players. M.S. in Physical Education, 1984, 84 p. (A.J. Goldfuss)

The relationship between selected anthropometric and strength measurements and linear and angular bat swing velocity was studied. In addition, regression equations were developed in order to predict bat swing velocity from upper body

anthropometric and strength measurements. Measurements of angular bat swing velocity were obtained through cinematographic analysis and linear bat swing velocity was measured directly from a Centrifugal Velocity Bat. 36 right-handed female HS softball players, 14-18 yrs of age from Monroe County, Pa., served as Ss. All correlations were found to be generally low; right grip strength had the highest relationship with angular (r=.41) and linear (r=.48) bat swing velocity. Equations to predict angular and linear bat swing velocity each consisted of 7 independent variables and had associated coefficients of determination of only 49% and 71%, respectively. The r between angular and linear bat swing velocity was .83. It was concluded that upper body limb lengths, girths, and strength are not highly related individually to bat swing velocity. Furthermore, neither angular or linear bat swing velocity can be accurately predicted from upper anthropometric and strength measurements, although grip strength of the right hand appears to be a prominent factor involved in each.

FORT HAYS STATE UNIVERSITY (D. Fuertges)
HAYS, KANSAS

11. DART, S.K. A study to establish a valid and reliable instrument for analyzing creative movement/dance for use by elementary school physical educators. M.S. in Adapted Physical Education, 1985, 109 p. (B.W. Lavay)

A review of the literature indicated this study is one of the few to address the issue of assessment within the realm of movement/dance. The Creative Movement/Dance Analysis (CM/DA) was designed to provide ELE school physical educators with a means of analyzing an individual's variety in using the elements of creative movement/dance which are space, effort, and time. Prior to data collection 10 test Ss were individually videotaped performing the 6 CM/DA movement and rhythm tasks. The test Ss represented high and low performance levels for each ELE grade level (1-5). The first investigative procedure determined face validity on the CM/DA. A detailed instrumentation outline was sent to a panel of 8 experts, all of whom were professionals active in some aspect of movement/dance education. Each movement specialist critiqued the instrument's validity, then assigned a yes/no rating based upon professional judgment. The second investigative procedure determined internal consistency on

the CM/DA. A group of 6 judges during 2 sessions observed the previously videotaped CM/DA tasks while utilizing a frequency count procedure in order to score the child's variety in using the elements of creative movement/dance. All of the 6 certified ELE physical educators teaching in the USD 489 of Hays, Kansas during the 1984-85 school year participated as judges. The final investigative procedure was a retest measure that determined test/retest reliability on the CM/DA. 4 out of the 6 judges returned 1 week later for a repeat evaluation which followed the same data gathering procedures as the first observation session. Data from the first 2 investigative procedures were analyzed by chi square techniques. Pearson product-moment correlation was used to analyze the test/retest data. The findings pertaining to face validity and internal consistency revealed non-significance ($p < .05$) between the first and second CM/DA test scores by all 4 judges. Therefore, the CM/DA can only report intra-rater reliability.

12. DIVINSKI, K.L. To determine the effect of a seven unit wellness program on the lifestyle knowledge of fourth grade male and female students and a significant other. M.S. in Physical Education, 1986, 95 p. (G.W. Arbogast)

The general problem of the present study was to determine the effect of an instructional wellness program upon lifestyle knowledge of 4th grade students, as well as to determine a similar effect on a significant other who was exposed only through a series of homework laboratory exercises. The Ss that participated in this study were selected from a population of 4th grade female and male students enrolled in the Unified School District 489 in Hays, Kansas. 4th grade class rosters were collected from each building principal, then 31 4th grade Ss were randomly selected. The exp group was composed of 5 females and 12 males while the control group was composed of 6 females and 8 males. In an attempt to determine if teaching "overflow" affected the lifestyle knowledge of a significant other, it was necessary that 1 significant other from each family unit participate in the study. The Modified American Association (AHA), Putting Your Heart Into the Curriculum Intermediate Level Heart-Health Test, was used as a measure of the individual's knowledge achievement regarding lifestyle education. All Ss (exp control and sig others) were pretested and posttested on the modified AHA knowledge test. The 4th grade students participating in the exp group were exposed to a wellness

program consisting of 7 meetings covering the following content units: physical assessment, cardiorespiratory endurance, nutrition, substance abuse, stress and relaxation, posture, and self-image and self-satisfaction. An analysis of covariance (ANCOVA) was used to determine the effect of the treatment upon lifestyle knowledge. Analysis of the data revealed a sig gain in concept acquisition ($p > .05$) for 4th grade students participating in the exp group. However, a data analysis revealed no sig gain in concept acquisition ($p < .05$) for sig others participating in the exp group. Therefore, a 7 unit wellness program affected the 4th grade students exposed to the treatment, but teaching "overflow" was not observed for the sig others participating in the exp group.

GEORGE MASON UNIVERSITY J. U. Stein
FAIRFAX, VIRGINIA

13. FIDLER, D.A. Effects of additional physical education on the physical fitness scores of special education and regular education students. M.S. in Physical Education, 1985, 160 p. (J.U. Stein)

Effects of additional PE on the 6 items of Youth Fitness Test scores of regular and special ELE school children were investigated. 14 special and 65 regular students were divided into special ed exp (SPEX, N=7) and control (SPCON, N=7) groups, and regular ed exp (REGEX, N=13) and control (REGCON, N=52) groups. Exp groups participated in additional PE plus regularly scheduled PE. Control groups participated only in regularly scheduled PE. Simple randomized ANOVA was used to determine relationships between pre and posttest raw and percentile scroes among the 4 S groups. Pre/posttest raw and percentile scores for each of the Youth Fitness Test items were compared for each of the groups by t. ANOVA comparisons were also made for raw and percentile change scores of each test item for each of the 4 groups. A TRS-80 Model III microcomputer and Radio Shack advanced statistical package were used in making all data analyses. Hypotheses on effects of additional PE on fitness scores for exp over control groups of regular students were rejected for all 6 test items. Hypothesis on effects of additional PE on fitness scores for exp over control groups of special ed students was rejected on all test items except the 50-yd dash. In general, performances of regular ed students were superior to those of special students.

14. PIERCE, K. The status of corporate fitness programs in the Metropolitan Washington, D.C., area. M.S. in Physical Education, 1985, 78 p. (J.U. Stein)

Information about status of and factors affecting employee fitness programs in a selected sample of corporations was obtained from chief executive officers, support and professional staff employees, and results analyzed to determine relevance for expanding and initiating employee fitness programs. Types of activities offered or considered, qualifications of instructors, acceptable participation times, and monetary allocations for fitness programs were investigated. Questionnaires were sent to chief executive officers of 30 selected corporations headquartered in the Metropolitan Washington, D.C., area with annual gross sales revenues of at least 91 million dollars. One support and 1 professional staff employee from each of selected corporations also provided input through a specifically designed questionnaire. Responses were received from only 10 chief executive officers and 15 staff employees. Descriptive and non-parametic statistics were used in analyzing data. Results revealed that chief executive officers had positive attitudes toward employee fitness programs. Attitudes of chief executive officers who personally exercised seemed more positive in believing programs did or would increase employee productivity. Support and professional staff employees revealed an interest in participating in employee fitness programs. Many of these selected staff employees currently exercised on their own.

15. THOMPSON, S. The George Mason University faculty/staff project. M.S. in Physical Education, 1985, 86 p. (F.K. Schack)

A 10% stratified random sample was drawn by computer from the total George Mason University faculty/staff population (483 classified employees, 458 faculty, 103 administrators) to evaluate health risk factors, lifestyle behaviors, and possible interest in a wellness program on campus. Survey data were tabulated using a computer software program for analyzing SCANTRON forms. Analyses of 160 completed responses (50% M, 50% F) included frequency distributions and cross tabulations by job classifications, sex, and age. Questions on health and fitness were divided into 3 areas: health status, lifestyle risk factors, and orthopedic concerns. Lifestyle questions included type of work,

exercise habits, and whether or not the employee smoked or drank, degree of emotional stress associated with the job, presence of high BP and elevated cholesterol, and current wt. Back and joint problems were also assessed.

GLASSBORO STATE COLLEGE (E. Chaloupka)
GLASSBORO, NEW JERSEY

16. STUMPO, S.F. A comparison of power to anthropometric somatotypes and percent body fat in sixteen to eighteen year old male athletes. M.A. in Physical Education, 1985, 53 p. (E. Chaloupka)

This study investigated the relationship between power and % body fat and/or power and anthropometric somatotypes in 16 to 18 year old male athletes. The Ss were 60 male student/athletes. The Margaria-Kalamen Power Test and the Heath-Carter Anthropometric Somatotype Method were administered to determine power output and body classifications, respectively. Wilmore-Behnke regression equations were used to statistically analyze the Ss to determine % body fat. A Person Product Moment Correlation Coefficient was calculated to determine casuality at the .05 level of sig. The results of this investigation indicated that a sig relationship existed between power and % body fat, power and endomorphy, power and mesomorphy, and power and ectomorphy.

IDAHO STATE UNIVERSITY
POCATELLO, IDAHO

17. KOLANDER, C.A. Gender role orientation and sexual interaction in married college students. H.S.D. in Applied Health Science, 1985, 154 p. (J.R. Seffrin)

The sample was comprised of 75 married college couples at a major western institution. Discriminant analysis was used to determine the linear set of predictor variables which best maximized the distinction among gender role orientation (GRO) groups, between genders, and among selected couples. The first discriminant function was sig for the relationship between GRO and a combination of sexual interaction (SII) and demographic variables. Androgynous Ss diff sig from masculine Ss in acceptance of the partner's perceived

pleasure with the sexual behaviors (MATE). The relationship between gender and SII was sig and showed that males were less accepting of their partner's pleasure with sexual behaviors and less perceptually accurate of their partner's sexual pleasures. The group centroids for traditional couples and selected androgynous couples were not separated for the variable, overall sexual dissatisfaction.

ILLINOIS STATE UNIVERSITY (R. Koehler)
ILLINOIS

18. DOHERTY, L.L. Selected physiological effects of aerobic dance among moderately and severely mentally retarded adults. M.S. in Adapted Physical Education, 1985, 89 p. (C Eichstaedt)

12 male and 13 female moderately and severely mentally retarded adults residing in a public institution and community group home participated in an 8-wk aerobic dance program on a voluntary basis. Pre- and post-assessments were conducted on the 300-yard run-walk, sit and reach, and standing broad jump to determine if physical fitness improved as a result of the experience. An ANOVA indicated that the 23 Ss completing the physical fitness measure improved in flexibility, $t(22) = -3.34$, $p = .05$. However, no sig diff were found in cardiovascular endurance or explosive leg power. It was concluded that aerobic dance may be beneficial for improving the physical fitness of some mentally retarded adults, and that it might be helpful to others if the training levels and dance routines are adapted.

19. KEARNS, L.A. The relationship of leadership and personality to success in coaching collegiate women's basketball. M.S. in Physical Education, 1986, 112 p. (V.R. Crafts)

Utilizing the final NCAA Division III national poll, the most outstanding coaches of women's basketball were recognized. Winning %'s from reported win-loss records were calculated. The less outstanding coaches were those with the lowest winning % for each of 4 seasons (1981-1985). 19 of the 37 most outstanding responded (51.4%) while 24 of the 54 less outstanding coaches responded. The raw scores for personality were obtained by the use of Cattell's 16PF, Form A; leadership raw scores were obtained by using the LBDQ-12.

Multivariate ANOVA were performed to determine both the overall personality and the overall leadership diff between the most outstanding and less outstanding coaches. The multivariate diff regarding personality between the 2 groups was non-sig, Wilks-Lambda=.614, p=.47. The multivariate diff regarding leadership between the 2 groups was non-sig, Wilks-Lambda=.686, p=.36. To determine the sig of the diff between the M of each personality factor and each leadership subscale for the most outstanding and less outstanding coaches, t-tests were performed, .05 level. These t-tests were all non-sig. Results indicate that there is not sufficient evidence that most outstanding coaches are indeed diff from less outstanding coaches in terms of overall personality, overall leadership, specific personality factors or specific leadership subscales.

LOUISIANA STATE UNIVERSITY (J. Nelson)
BATON ROUGE, LOUISIANA

20. ABRAHAM, P.C. Task modification and achievement in a soccer skill. M.S. in Physical Education, 1985, 42 p. (A.M. Lee)

The effect of a modified task structure on success rate and learning of soccer heading skills was investigated. A secondary purpose was to develop a soccer heading skills test for children. 2 groups of boys and girls (18 per group) were randomly formed and taught a sequence of subskills leading to heading in soccer or the whole skill of heading in soccer. Ss were evaluated during daily practice on the frequency of correct trials and the frequency of all practice trials. A process checklist and a skill test were used to evaluate the children's final heading performance. Data were analyzed in a multiple discriminate analysis to compare the modified and the whole task approaches to teaching. There were no diff in the % of successful practice trials, the no. of total practice trials, scores on the technique rating and scores on the skill test between the group taught by progression of part skills and the group taught by the whole skill method. The heading skill test was determined to be a valid measure of skill in heading. The no. of trials with correct technique was highly related to achievement.

21. ASHY, M.H. Student practice and selected teacher behaviors in elementary physical education. Ph.D. in Physical Education, 1985, 94 p. (A.M. Lee)

The effects of correct practice attempts, total practice attempts, and selected teacher behaviors on student achievements in a novel motor skill were examined. 8 pre-service PE teachers each taught two 20-min lessons to 10 4th graders. The 4 more-effective and the 4 less-effective teachers were identified by cluster analysis using student posttest scores as the criterion. MANOVA was used to compare the more- and less-effective teacher groups on teacher behaviors with regard to frequency (cues, demonstration, knowledge of performance, encouragement) and duration behaviors (specific and general observation, management, instruction). Follow-up ANOVAs revealed that encouragement was the only sig distinguishing factor favoring the more-effective teachers. The more-effective teachers averaged twice as many cues as the less-effective teachers, and students in the more-effective teachers' classes had sig more correct practice trials than those in the less-effective teachers' classes. Moreover, sig r's were found between student achievement and correct practice trials but not total practice trials. It appears that the quality of practice on this novel skill was a better indicator of learning than the total amount of practice.

22. BROWN, S.D. The interaction of conceptual tempo and modeling on motor performance. Ed.D. in Physical Education, 1985, 62 p. (A.M. Lee)

48 boys and girls, 10-11 yrs, classified as impulsive (IMP) or reflective (REF) were randomly assigned to one of three modeling groups or a control group. The modeling strategies included: silent-model, verbal-model and verbal-model with self-instruction. The task was a motor skill obstacle course in which both speed and errors were scored. Data were analyzed by a 2 x 4 (Cognitive Style X Model Type) MANOVA with the no. of trials to criterion, the average no. of errors per trial, and the average amount of time on the 3 trials after criterion as the dependent variables. The results indicated that the REF children performed more accurately (took fewer trials to criterion and made fewer errors per trial) than did the IMP children. There were no diff in time scores. A cognitive X model type interaction revealed that IMP Ss made sig more errors than REF children

when performing without a model. Further, the IMP children performed equally as well after observing a silent- or verbal-model, or after observing a verbal-model and participating in self-instruction. The REF Ss performed equally as well after observing a silent- or verbal-model and slightly better with a verbal-model plus self-instruction. It was concluded that the modeling process is essential for IMP children and should be adjusted in an attempt to make the learning environment compatible with the learning of the child.

23. COTTON, C.H. Random access: A choreographic study utilizing methods of chance. M.S. in Dance, 1985, 73 p. (T.E. Worthy)

Two types of chance operations were employed in the 2-part dance: one was used during the choreographic phase and the other was used during the actual performance. Chance methods were used to determine: types of movement and their order and duration, spatial patterns and relationships, no. of dancers, and no. and order of sections to use chance methodology. The production elements were designed and the work was presented publicly in the Louisiana State University Union Theater by 6 members of the LSU Dance Theatre. In order to judge the works' aesthetic validity, the choreographic thesis was evaluated by a thesis committee using 19 criteria developed specifically for this study.

24. EDWARDS, R.V. The effects of performance standards on behavior patterns and motor skill achievement in children. Ph.D. in Physical Education, 1985, 106p. (A.M. Lee)

Ss were 78 4th-grade and 80 5th-grade students from 8 classes in 2 ELE schools. Two 4th and 5th grades received standards in a 1-wk exp teaching unit, and two did not. A Solomon 4-group design was used. The data were analyzed in a Treatment (standard-no standard) X pre (pre-no pretest) X sex (male-female) X grade (4th-5th) MANOVA using posttest and motor appropriate trials as the dependent measures and was followed-up by 2 separate ANOVAs. r's between behavior patterns and performances were also computed. As expected, the treatment group was better than the control group, boys better than girls and 5th graders better than 4th graders. Ss with standards performed sig better than those with no standards. The pre X treatment interaction suggested that

having a pretest tends to standardize the amount of practice a child takes. There was a positive r between motor appropriate practice and performance regardless of treatment group. These data suggest that performance can be improved by individual performance standards and that care should be taken in using pre- and posttest methods for testing motor skill.

25. FRENCH, K.E. The relation of knowledge development to children's basketball performance. Ph.D. in Physical Education, 1985, 188 p. (J.R. Thomas)

Three experiments were conducted. The 1st exp established the reliability and validity of the instruments used to measure basketball (BB) knowledge, dribbling skill, shooting skill and individual components of offensive BB performance--control, decisions, and execution. The 2nd exp compared expert and novice BB players in 2 age leagues, 8-10 yr-olds and 11-12 yr-olds, on the individual components of performance and on measures of BB knowledge, dribbling and shooting skills. The cognitive decision making component maximally descriminated expert and novice BB players, and expert players of both age groups possessed more shooting skill and more BB knowledge. Canonical analysis indicated that BB knowledge was related to decision making skill in BB, whereas dribbling and shooting skill were related to the motor components of control and execution. Exp 3 examined the changes in the individual components of performance, BB knowledge, dribbling and shooting skills from the beginning to the end of the season. Ss improved in the cognitive decision-making component and BB knowledge increased from the beginning to the end of the season. Only BB knowledge was a sig predictor of the decision making components at the end of the season. The overall results of Exp 2 and 3 indicate that the development of the sport knowledge base plays a salient role in skilled sport performance of children. In particular, many of the deficits of young children in youth sports may be due to lack of sufficient sport knowledge which is necessary to make appropriate decisions within the context of sport.

26. HURST, D.L. Health services provided for the elderly in Louisiana by the area agencies on aging. M.S. in Health Science, 1985, 64 p. (Y. Iyriboz)

27 randomly selected LA Area Agencies on Aging (AAA) were

given a 15-item questionnaire regarding the extent of elderly demographic information available from the AAAs; the extent of information available on AAA services; the information sources used by AAA to determine demographic data and service availability and utilization; the AAA's primary service barriers; the services provided or contracted by the AAA; and the AAA's need for outside technical assistance to effectively provide services. Data were obtained from 74% of the AAAs. Only 37% of the AAAs knew the extent of service availability and utilization. Two-thirds used only census data, research done by another organization or by a neighboring AAA to complete the request for information. The AAAs were primarily service providers. Lack of funds was the biggest barrier to providing more services. Outside technical assistance was needed by over half of the AAAs. Top service category priorities were monitoring/linkage, in-home services, screening/evaluation and community services.

27. TESTERMAN, E.P. Training and detraining effects on selected physiological measures of fitness in adult black women. Ed.D. in Physical Education, 1985, 64 p. (J.K. Nelson)

Pre, post and detraining post measurements were made on body wt, HR, BP, sum of skinfolds (triceps, suprailium and thigh), and predicted max VO_2. The study was conducted in 4 stages: 2 training stages and 2 detraining. Training was either by walking/jogging or aerobic dance 3 times per wk over 11 to 12 wks at 70-75% of age-adjusted max HR. One detraining period was for 10 wks, a second period for 15 wks. Data were analyzed by factorial ANOVA. Predicted max VO_2 was sig increased after training and was either maintained or reduced back to pretraining levels through detraining. Skinfold thicknesses were sig reduced following training, and after detraining either stabilized or returned to pretraining values. Body wt, HR, and systolic and diastolic BP underwent no changes from training through the detraining period.

28. WILLIAMS, J.H. Hemoglobin desaturation in highly trained athletes during heavy exercise. M.S. in Physical Education, 1985, 49 p. (S.K. Powers)

It has been generally accepted that during exercise at sea level, the pulmonary system of normal healthy individuals is capable of maintaining arterial oxygen tension at near resting levels. However, recent evidence questions whether this generalization applies to the highly trained endurance

athlete who is capable of achieving very high levels of metabolic demand. Hence, this study sought to examine the relationship between VO_2 max and arterial oxygen-hemoglobin saturation ($\%Sa_{O_2}$) during short-term heavy exercise in trained athletes and untrained individuals. 10 trained distance runners and 7 untrained males exercised at 95% of VO_2 max for 3 min. Min-by-min measurement of $\%Sa_{O_2}$ was obtained via ear oximetry. The r's between $\%Sa_{O_2}$ and VO_2 max during exercise were - .68, - .74, and - .72 ($p < .05$) for minutes 1 through 3, respectively. In general, those Ss with the highest VO_2 max showed the greatest decrease in $\%Sa_{O_2}$. By comparison, there was no diff ($p > .05$) in resting $\%Sa_{O_2}$ between the trained (96.3+0.2%) and the untrained (96.3+0.4%) Ss. However, at minute 3 of exercise, $\%Sa_{O_2}$ was sig lower in the trained Ss (87.0+0.7%) than in the untrained Ss (92.6+0.7%). These data demonstrate that arterial desaturation occurs in healthy highly trained endurance athletes during heavy exercise at sea level.

MONTANA STATE UNIVERSITY (K. Loper)
BOZEMAN, MONTANA

29. PLUMMER, O.K. The effect of racquetball and rhythmic fitness on the self-concept of college women. Ed.D., 1985, 111 p. (H.N. Worrest)

In the pretest-posttest designed study, at the University of Nevada-Reno, 254 women completed the study; racquetball 39, rhythmic fitness 124, and control 111. The TSCS was used to measure self-concept. The statistical methods used were ANOVA and ANCOVA. Sig diff ($p<.05$) were found between the rhythmic aerobics group and the control group in the areas of physical-self and self-satisfaction. Sig diff ($p<.05$) were found between the rhythmic aerobics and racquetball group in the areas of person-self, family-self, behavior and Total Positive score. All sig diff favored the rhythmic aerobic group. No sig diff ($p<.05$) were found at posttest between Ss that had taken rhythmic aerobics before the semester began and those that had not taken rhythmic aerobics before. There were sig diff ($p<.05$) in the racquetball group between those Ss who had taken racquetball previously and those who had not. The beginning racquetball Ss were more critical of themselves at posttest. Based on the review of literature and the results of this study, the researcher concluded that rhythmic aerobics is a positive self-concept activity for

college women. No conclusions were drawn concerning the racquetball Ss until further research could be done and comparisons made to male Ss.

NEW YORK UNIVERSITY
NEW YORK, NEW YORK (S. Weinstein)

30. LEFKARITES, M.P. A study of the transition from a social model to medical model of childbirth on the Greek island of Rhodes. Ph.D. in International Community Health Education, 1984, 525 p. (S. J. Weinstein)

This study explored 3 socio-cultural issues of childbirth that have been the subject of debate in the United States concerning the introduction of modern medical birthing practices. The issues involve the claim by medical model opponents that such introduction has changed the experience of childbirth from a culturally normal event to one of illness, from a family-centered event to one that is depersonalized, and from a private and personal experience to one that is public and impersonal. 3 groups were studied: of 25 women who gave birth at home, 11 women who gave birth in both a home and medical setting, and 34 women who gave birth in a medical facility. The major method for gathering data was a formal interview schedule that explored their routines of daily life before and during the childbearing period, their activities during labor and birth, their health beliefs and practices of childbearing, family participation during labor and birth, their contact with newborns during the postpartum period, and the care of birth attendants. Comparisons among the 3 birth groups included both quantitative and qualitative data. The claims were supported by the findings on Rhodes. The experiences of Rhodian women reveal that there are both social costs and benefits related to modernizing childbirth.

NORTHEAST MISSOURI STATE UNIVERSITY (L. Boleach)
KIRKSVILLE, MISSOURI

31. HAUCK, E.C. Strength, body composition, and performance of selected high school wrestlers. M.A. in Physical Education, 1985, 36 p. (J. Mayhew)

This study sought to compare pre- and post-season measures of

strength and body composition and to determine the relationship of strength and body composition to performance in HS wrestlers. 14 members from the 1984-85 Brookfield (MO) HS wrestling team were measured for body composition and strength at the beginning and end of the season. The body composition data included measures of ht, wt, age and %fat. The strength tests included bench press, leg press, isokinetic flexion and extension of the elbow and knee, and isometric grip strength. Data were recorded using the average number of points scored per match and the individual winning percentages to determine the performance of each wrestler. Paired t-tests revealed a sig relationship between pre- and post-season measures of body composition and upper body strength. Pearson r determined sig relationships between body composition components and measures of strength to performance.

32. MAREY, S. The relationship of selected personal, anthropometric, and motor performance variables to game performance in college female volleyball players. M. A. in Physical Education, 1985, 56 p. (L. Boleach)

This study sought to identify the relationship of selected personal, anthropometric, and motor performance variables to game performance in college female volleyball players. 37 female volleyball players who composed the Northeast Missouri State University (n=14) and Graceland College (n=23) female volleyball teams in the fall of 1984 were used as Ss. The players were measured for overhead volley, forearm volley, self bump/set, serving, agility run, vertical jump, total body RT, total body MT, TRT, flexibility, endurance, ht, and wt. The Ss were ranked under game conditions by 4 qualified volleyball coaches. Age and playing experience were sig related ($p < .001$) to playing ability. Vertical jump, agility, total body RT and shoulder flexibility were sig ($p < .01$) related to playing ability. Multiple regression analysis determined that a test battery consisting of age, vertical jump, total body MT, agility, ht and left ankle flexibility could accurately (R=.91) predict playing ability accounting for 83.0 percent of the common variance.

OREGON STATE UNIVERSITY (J. Dunn)
CORNVALLIS, OREGON

33. BOONCHAI, W. Changes in strength, antropometric measurements and cardiovascular function as a consequence of participation in a coed weight training course. Ed.D. in Education (Physical Education), 1984, 157 p. (C. Lambert)

34. BRUBAKER, D.A. Response of skin surface temperature to an application of high voltage pulsed galvanic current (HVPGC) as a treatment method for sports injuries. Ed. D. in Education (Physical Education), 1984, 86 p. (D. Campbell)

35. CHAING, K.S. The relationship between biorhythms and injuries in female college gymnastic participants. M.S. in Education (Physical Education), 1985, 52 p. (R. Irvin)

36. ELAM, R.P. The relationship between tibial nerve conduction velocity and selected strength and power variables in college football linemen. Ph.D. in Education (Physical Education), 1985, 82 p. (J.P. O'Shea)

37. HICKS, D.M. Comparative cinematographic analysis of depth jumping and long jump take-off as performed by male college long jumpers. M.S. in Education (Physical Education), 1986, 76 p. (J.P. O'Shea)

38. KING, C.M. Classroom teachers' accuracy in observing students' motor performance. M.S. in Education (Physical Education), 1985, 62 p. (J.M. Dunn)

39. MAGUIRE, P. The effects of supplemental home instruction by parents utilizing the Data Based Gymnasium instructional model of the performance of selected motor skills with moderately and severely mentally retarded children. Ph.D. in Education (Physical Education), 1985, 122 p. (J.M. Dunn)

40. NISHIZAWA, S. Hemispheric processing of kinesthetically oriented spatial perception. Ph.D. in Education (Physical Education), 1984, 113 p. (D. Campbell)

41. ODDOU, W.E. Differential thermogenic response in juvenile-onset type obesity and maturity-onset type obesity. Ph.D. in Education (Physical Education), 1985, 221 p. (D. Campbell)

42. SIEVERS, G.K. The effectiveness of the PO_2 aerobic exerciser in simulating high altitude training at sea level in cross country runners. M.S. in Education (Physical Education), 1986, 77 p. (J.P. O'Shea)

43. STIDWILL, H.F. Motives toward track and field competition of foreign and domestic grant-in-aid student athletes in NCAA Division I colleges and universities. Ph.D. in Education (Physical Education), 1985, 81 p. (A. Flath)

PENNSYLVANIA STATE UNIVERSITY (H. Lundegren)
UNIVERSITY PARK, PENNSYLVANIA

44. ALEXANDER, P.M. Effects of an eight-week strength training program on strength, anaerobic power and anaerobic capacity. M.S. in Physical Education, May 1985, 62 p. (J.L. Hodgson)

Effects of an 8-wk strength training program relative to isometric strength, isokinetic strength, anaerobic power and anaerobic capacity was examined. Male Ss (n=25) enrolled in a PA State University strength training class acted as the exp group, whereas male Ss (n=13) who refrained from strength training served as the control group. The training program included 13 Nautilus exercises executed 3 days per wk over an 8-wk period. Physiological measurements were taken prior to and following training; ANOVA and t-tests were used to test for sig. The exp group experienced increases in isokinetic leg extension strength (60^{o}, 120^{o} and 180^{o} per sec) while being sig diff from the control group. Anaerobic power (Margaria-Kalaman Power Test and Wingate Anaerobic Test), anaerobic capacity (Wingate Anaerobic Test), and body wt did not increase sig. Both groups demonstrated increases in isometric leg extension strength but the diff between the groups was not sig. The pre-test correlations between isokinetic leg extension strength and anaerobic power (Wingate, r=0.24; Margaria-Kalaman, r=0.22) and isokinetic strength and anaerobic capacity (r=0.23) were positive but not stat sig. The results of this study reinforce that isokinetic strength, anaerobic power and anaerobic capacity are separate physiological potentials.

45. ANDERSON, R.K. The effect of age on sweating responses of women with similar aerobic capacities. M.S. in Physical Education, 1985, 108 p. (E. Kamon)

Younger (n=8) and older (n=8) women, ages 20-30 and 52-62, were matched for VO_2max, body surface area, and body fatness. After acclimation to the test conditions, the women exercised at 40% VO_2max in warm/humid (T_{db}/T_{wb}=37°C/30°C) and hot/dry (T_{db}/T_{wb}=48°C/25°C) environments. Variables measured included HR, rectal and mean skin temp, whole body and local sweat rates (forearm, chest, and back), and sweat gland density. There were no diff between age groups in HR, mean skin temp, or sweat gland density in either environment. The older women demonstrated a sig greater rise in rectal temp in both

environments. In the hot/dry environment, the older women had sig lower whole body and local sweat rates which appeared to result from a decreased output per sweat gland rather than from a decreased no. of sweat glands recruited. Conversely, in the warm/humid environment, the older women had sig higher back sweat rates, and sig higher sweat production per gland. The diminished heat tolerance of the older women does not appear to be related to VO_2max, but rather to a decreased ability of the older women's sweating mechanism to appropriately meet the demands of exercise in dry and humid heat.

46. BAKER, R.E. A survey of parents/guardians of Western Pennsylvania high school varsity boys' basketball players regarding their knowledge, attitudes, and perceptions of the athletic recruiting process. M.S. in Physical Education, 1985, 63 p. (R.J. Sabock)

An instrument was developed by the investigator to assess the attitudes, perceptions, and knowledge of parents of HS varsity boys' basketball players with respect to the athletic recruiting process and NCAA recruiting rules. A pilot study was conducted to determine the clarity of the instrument. 44 large HSs in Western PA were selected using a stratified random sample proportional to the no. of large schools within each PIAA district. Participating schools either supplied the names and addresses of parents, or agreed to address and distribute the instrument to the parents. 476 questionnaires were mailed directly to the parents, or to schools for distribution, of which 117 were returned by the deadline. Males accounted for 60.7% of the returns, while 39.3% of the Ss were females. The data were analyzed using descriptive stats, t-test and X^2 analyses. Responding parents displayed positive attitudes toward and perceptions of the recruiting process. They felt there were enough benefits for the students to justify intercollegiate athletic recruiting. The parents also displayed a limited knowledge of NCAA recruiting rules, averaging 43.4% correct responses to statements regarding rules. There was, however, no sig diff between male and female parents with respect to their knowledge of NCAA recruiting rules and regulations.

47. BECTON, E.D. An investigation of the leisure patterns of obese and non-obese black women. M.S. in Recreation and Parks, 1985, 56 p. (H.M. Lundegren)

The 42 women who participated in this study were aged 20 to

40 yrs. Of those employed, the representative occupations held were teacher, counselor, dental nurse, office manager, secretary, and office administrator. For the purpose of this study, leisure choices on the McKechnie Leisure Activities Blank were reduced to include only 50 activity choices. In addition to completing the LAB, ht, wt, and skinfold measurements were taken. Lange calipers were used to measure skinfold thickness and based on Mayer's (1968) criteria of 23 mm of skinfold over the mid-point of the triceps muscle, the women were classified as obese or nonobese. A bathroom scale was used to record their wts along with an adjustable ruler which recorded their hts. It was hypothesized that obese women participate in fewer activities than the nonobese, with the frequency of participation in active physical activity being less in the obese group, and also the frequency of participation in sedentary physical activity being greater in the obese group. The data collection was conducted during the spring of 1985 and lasted approximately 3 wks. An independent t-test using pooled variance was used to test the hypotheses. A 1-tailed test at $p < .05$ level was used to affirm sig. Statistically non-sig diffs were found to exist when comparing M no. of activities participated in by each group. Based on the findings of this study, evidence suggests that obese and nonobese black women participate in similar leisure activities, with sedentary activities more frequently chosen.

48. BERARDINELLI, P.K. A list of competencies and skills for entry-level health educators in federally qualified HMOs. M.S. in Health Education, 1985, 66 p. (M.E. Taylor)

Ss in this study were current HE specialists in federally qualified HMOs in the US. Using an instrument developed by the investigator and another graduate student, 219 surveys were distributed, and 76 returned (approx. 35%). No stat sig diff was found in the expectations of HE specialists without HE degrees. Overall the HE specialists believed that communication and ed skills, and competencies in the areas of health and ed were most essential for entry-level health educators in HMOs.

49. BOOHER, D.A. Joseph Vincent Paterno, football coach: His involvement with the Pennsylvania State University and American Intercollegiate football. Ph.D. in Physical Education, 1985, 274 p. (J.A. Lucas)

Joseph Vincent Paterno (21 December 1926, Brooklyn, NY), college football coach, was the oldest of 4 children. He attended Brooklyn Preparatory School and Brown University, where he earned a degree in English Literature. Prior to graduation, Paterno considered entering law school, but his love for athletic competition hindered his decision. In June of 1950, he assisted Coach Charles "Rip" Engle with spring practice. Engle, who had already accepted the position of head coach at the PA State University, asked him to go along as offensive backfield coach. Paterno was appointed head coach in 1966. Almost from that time he believed that the intellectual and athletic could coexist, and even complement each other. His philosophy of coaching blends an emphasis on hard work and fun, but with, at times, an excessive compulsion to win. Paterno considers coaching and teaching as very similar activities, believing he is a teacher first. Yet, while many players have praised his coaching philosophy, others have questioned the educational value of verbally attacking players in the presence of their peers and permitting injured athletes to participate in "important" games. Winning is important to Paterno, but the quest for excellence is the key to the Paterno philosophy.

50. BREINER, T.J. Comparison of level, uphill, and downhill running economy. M.S. in Physical Education, 1985, 77 p. (J.L. Hodgson).

19 trained runners with a VO_2 max of 68.2 ml/kg. min (58.0 -76.0) performed a 7-min treadmill run at each of the following speed and grade conditions: 238 m/min, 0% grade; 167 m/min, +7.5% grade; 291 m/min, -5% grade. The 3 runs were all completed in 1 session and were separated from one another by a 5-min rest period. M oxygen uptake (ml/kg.min) was 46.8 (41.4-54.4) during level running, 48.0 (42.4-53.4) during uphill running, and 46.9 (41.5-52.9) during downhill running. Ss used an average of 69%, 71%, and 69% of VO_2 max, respectively, during level, uphill, and downhill running. Correlations in running economy using the Pearson product-moment method were r=.92, r=.90, and r=.83, respectively, between level vs. uphill, level vs. downhill,

and uphill vs. downhill grades, indicating little variation in running economy over the 3 conditions. Spearman Rho rank correlations were r=.92, r=.84, and r=.79, respectively. Volumes of expired air (VE) averaged 64.6, 64.8, and 68.1 L/min, respectively, for level, uphill, and downhill running. Ventilatory equivalents (VEQ) averaged 20.3, 19.8, and 21.3, respectively, for the 3 conditions. A 1-way ANOVA with repeated measures indicated that downhill VE was sig higher than both level VE and uphill VE ($p < 05$) and that downhill VEQ was higher than both level and uphill VEQ < (p .001). It is suggested that the higher ventilations observed during downhill running are a mechanical consequence of the higher impact forces during footstrike.

51. BRICKER, S.K. The development of an instrument and protocol for the analysis of injuries reported in intercollegiate intramural activities, using The Pennsylvania State University intramural touch and flag football program of 1984 as reference. M.S. in Health Education, 1985, 127 p. (J. W. Powell)

The purpose of this study was to develop an efficient and practical means of recording and analyzing data reported from injuries sustained during intramural participation. To examine the applicability of this surveillance instrument, the injury data from injuries reported during the fall 1984 intramural touch and flag football program of the PA State University were used for analysis. 92 injuries were reported, for an injury rate of 4.9/1,000 participant-exposures. Further calculations demonstrate that the intramural football program averaged 3.8 injuries among an average of 750.7 participants during each evening of regular tournament play. A stat sig diff was indicated in the no. of injuries reported by females participating in flag football and males participating in flag and touch football. Observation of the follow-up management reported by females demonstrated that the most frequently reported injuries which were seen by a physician were treated by proprietary management and resulted in a loss of class or work time. For males, temporary stabilization was more often used upon the advice of a physician rather than the advice of proprietary management. The instrument and protocol designed for the study were easily made applicable to the injuries reported. Expansion and deletion of categories within variables were easily programmed in the computer as the needs of the activity or program required.

52. BUCKLEY, W.E. A multivariate analysis of conditions attendant to concussion injuries in college football, 1975-1982. Ph.D. in Health Education, 1985, 164 p. (E.E. Hunt)

Using data drawn from the National Athletic Injury/Illness Reporting System (NAIRS) of the PA State University, covering an average of 49 college teams over the 8-yr study period (1975-1982), over 36,000 athlete-seasons and 395 team-seasons were represented. The data selected were limited to 1,005 game-related concussion injuries. Concussion accounted for 75% of the total no. of injuries on or about the head. As these concussion injuries were examined relative to position, situation, and activity using a log-linear modeling technique, interactions among the variables were established. In order to estimate levels of risk associated with observed cell frequencies, exposure ratios for each variable were calculated. This study generally revealed that the position, activity, and situation at the time of the game-related concussion injury were integral components to the occurrence. The highest risk of concussion injury was to offensive and defensive players involved in a block on a rushing play, with the running back demonstrating the highest risk of concussion injury. The lowest measures of risk were for offensive lineman and quarterbacks while blocking on any type of play. Defensively, the secondary exhibited the highest level of risk of concussion injury while being blocked on a running play. The smallest risk of concussion injury was demonstrated by linebackers on passing plays. The investigation demonstrated the viability of multivariate analysis of sport injury data, and confirmed the utility of the log-linear analysis of such qualitative data.

53. CAMPE, V.I. Recreational activities as a deterrent to delinquency. M.S. in Recreation and Parks, 1985, 124 p. (H.M. Lundegren)

The 2,269 Ss in this sample were 7th through 12th graders (excluding 18-yr-olds) from a school district in a residential, suburban area in PA in 1982. Chi Square analysis was used to test the association between 4 REC activities (sports, religious activities, hobbies and skills, and extracurricular activities) and 9 delinquent acts. Kendall's Tau C was used to indicate the level of association. The hypotheses were presented such that the more an individual was involved in a particular REC activity

the less likely it was posited that they would be involved in delinquent acts. Involvement in REC activities was not found to be a consistent deterrent to delinquency. The hypotheses involving sports and extracurricular activities were not supported. The hypothesis involving religious activities was supported. Hobbies and skills had the most positive association such that those students who were involved were less delinquent.

54. CARLINO, S. Title IX: A legislative history, selected court cases, and the future of women's athletic programs. M.S. in Recreation and Parks, 1985, 111 p. (F.B. Guadagnolo)

Throughout our history, females have been channeled into a weaker, more passive role in our society. Because of this, they have been prohibited from opportunities given almost exclusively to males. Using a historical study, Title IX, which forbids sex discrimination in education programs or activities receiving federal financial assistance, was traced from its roots in the Civil Rights Act of 1964, through to present legislation affecting its very existence. Athletes, covered under this act, created the most upheaval. Females wanting to play sports filed suit under Title IX, and then winning of cases involving non-contact sports resulted in the elimination of barriers to contact sports. Title IX must be given credit for the huge increases in dollars, participation rates, sports offered, and scholarships afforded to women. Interscholastic participation rates skyrocketed 500% to 600% as a result of Title IX. Intercollegiate athletic participation increased by over 100%. Women's budgets had been averaging 2% of the athletic budget, and since passage, budgets have grown to between 16% and 24%. Scholarships were virtually non-existent prior to Title IX, whereas 10,000 women are now attending colleges supported by athletic scholarships. While women's sports programs have come a long way, there is a present danger with the narrower interpretation of Title IX's coverage.

55. DELANO, K.M. An investigation of marketing strategies to increase attendance at major league baseball games. M.S. in Physical Education, 1985, 78 p. (R.J. Sabock)

The purpose of this study was to describe the current marketing strategies of the 26 major league baseball teams with regard to the use of product packaging, identifying, and attempting to reach specific target markets, and use of

promotions or giveaways to draw fans to the stadiums. All vice presidents of marketing or business operations for major league baseball teams were sent a questionnaire developed by the investigator. A frequency analysis and a crosstabulation analysis were performed. The results indicated professional marketing is growing in importance and scope, but is lagging behind business marketing which specializes in target marketing their products. The majority of the marketing departments have been operating for a maximum of 10 yrs. Two-thirds of the clubs have conducted research, although the studies seem limited in scope. All clubs advertised and 23 clubs used giveaways to increase attendance at home games. The average stadium capacity filled across the league was 42.61%, giving the clubs 31-71% of total revenue from gate receipts. "Attracting new paying fans" was cited as the most important objective of marketing programs. The majority of the marketeers indicated that they needed to compete more effectively in the entertainment market.

56. DiMARCO, C.A. An examination of the existing relationships among specific health behaviors, health locus of control, stress manifestations, extracurricular activities and selected demographics within a university population. Ph.D. in Health Education, 1985, 116 p. (J.M. Eddy)

Ss (n=611) in this study were students enrolled in selected 1-credit HE classes at The PA State University during fall semester 1984 who volunteered to complete a questionnaire packet containing several instruments to measure both independent and dependent variables. An HRA was used to measure the dependent variables: use of cigarettes, beer, wine, mixed drinks, and mind-altering drugs; sleep patterns; seat-belt use; physical activity; and performance in school. The multi-dimensional Health Locus of Control Scale (Wallston et al., 1978) identified internal, powerful others, and chance health locus-of-control beliefs. A somatic response scale was used to measure the frequency of physiological responses of stress experienced. The questionnaire also contained questions pertaining to demographics and participation in extracurricular activities. Data were analyzed by a step-down Multiple Linear Regression procedure. The findings indicated that the independent variables isolated to explain health behavior proved to be successful in accounting for only a small amount of sig variance. Ss' stress level, student status, and

participation in REC physical activity were the variables which most frequently explained the selected health behaviors. Use of cigarettes, beer, and wine was more strongly associated with older students than younger ones, and males were more likely to consume beer than their female counterparts. Ss who experienced high levels of stress were more likely to use mind-altering drugs and get fewer hours of sleep, and were less satisfied with their performance at school. The 3 dimensions of health locus of control were not powerful contributors in explaining accountable variance in the health behaviors studied.

57. ELDRIDGE, S.A. The relationship between outcome expectancies and causal attributions of male intercollegiate soccer players. M.S. in Physical Education, 1985, 60 p. (D.V. Harris)

Ss (n=27) were members of the 1984 PA State University men's soccer team. Expectancies and attributions for 6 home games, selected on the basis of the head coach's predictions about the outcome of those games, were examined. Expectancy level was determined by players' responses on a pre-game questionnaire. 2 post-game questionnaires were used to measure causal attributions. Post-game questionnaire score Ms were analyzed in 2 ANOVAs: a) expectancy level X match outcome (2 X 2), and b) player status X match outcome (3 X 2). A post-hoc non-parametric test, X^2, was utilized to examine diffs between the expectancies of starters and substitutes. Findings did not support a direct relationship between expectancy level and outcome attributions.

58. ETHINGTON, J.B. Leisure behavior of couples in the transitional stage of the family life cycle. M.S. in Recreation and Parks, 1985, 104 p. (G.C. Godbey)

In this study, the selection of leisure activities of couples from 45 to 60 yrs of age were analyzed and categorized according to need, lifestyle, and decision factors. 110 Ss constituted an available sample selected from employees of 4 companies in PA: Hershey Park, Berger Associates, Milton Hershey School, and Duke Power. The instrument used in the study was devised by combining 3 established measures of lifestyle, needs, and activities. Each S received a survey packet and 1 partner answered the questionnaire for the couple. The analysis of data included descriptive stats to present profiles of the couples and an analysis of activity

groups to determine common characteristics of couples selecting each group to develop a "character-type." The dependent variables--need, lifestyle, and decision factors--were analyzed by Multiple Classification Analysis to establish sig levels and the effects of each variable on activity selection. The reason one participated in an activity and the rate of participation were both found to be very sig factors in the couples' choice of leisure activities. Lifestyle factors were found to be important, although not sig. Decision factors were not found to be important or sig.

59. EVERT, P.A. Effects of a winter-spring training program on the body composition, aerobic power, and post-training muscular strength of college football players. M.S. in Physical Education, 1985, 79 p. (K.G. Stoedefalke)

20 veteran members of the PA State University varsity football team were evaluated during the first 3 wks of and immediately following completion of a 14-wk winter-spring training program with regard to body composition and aerobic power. In addition, post-training knee extension strength was measured. Body composition was determined utilizing hydrostatic weighing. Max aerobic power was determined during an exercise tolerance test on a motor-driven treadmill. Isometric and isokinetic knee extension strength ($0^{o} \cdot s^{-1}$, $30^{o} \cdot s^{-1}$, $180^{o} \cdot s^{-1}$, $300^{o} \cdot s^{-1}$) was measured by a Cybex II isokinetic dynamometer. Findings revealed that linemen were taller, had greater total body wt (TBW), greater fat-free body wt (FFBW), and possessed larger % body fat than did backs ($p < .05$). Body composition did not change sig during the training program. Max O_2 uptake per kg TBW and per kg FFBW was greater in backs than linemen. Sig and similar increases were observed in VO_2 max for both backs and linemen. Post-training muscular strength measurements revealed that linemen were stronger than backs in absolute torque and force generated at $0^{o} \cdot s^{-1}$, $30^{o} \cdot s^{-1}$, and $180^{o} \cdot s^{-1}$; and in absolute torque generated at $300^{o} \cdot s^{-1}$. This advantage did not exist when force generated was normalized per kg TBW and per kg FFBW.

60. FLETCHER L.M. The relation of maximal oxygen uptake and hyperoxia to reaction and movement times in older men and women. M.S. in Physical Education, 1985, 76 p. (E.R. Buskirk)

Reaction (RT) and movement times (MT) were examined in 17 men and 15 women (54 to 67 yrs old), who varied in aerobic fitness, during normoxic and hyperoxic (O_2=67%) conditions. Ss were categorized as high fit men (VO_2 max between 37 and 47 $ml \cdot kg^{-1} \cdot min^{-1}$), low fit men ($VO_2$ max between 22 and 32 $ml \cdot kg^{-1} \cdot min^{-1}$), high fit women ($VO_2$ max between 32 and 42 $ml \cdot kg^{-1} \cdot min^{-1}$), and low fit women VO_2 max between 17 and 27 $ml \cdot kg^{-1} \cdot min^{-1}$). Each S performed 20 trial per session. M scores for each session were used to determine diffs between groups. The first visit involved 1 normoxic session and the second visit involved 1 normoxic session followed by 2 hyperoxic sessions, each session separated by a 5-min rest period. RT showed poor correlation (r=.21) to VO_2 max. There were no stat sig diffs between groups for RT. Men were sig faster ($\bar{x}$=201.7 msec) than women ($\bar{x}$=289.7 msec) for MT in the normoxic condition. VO_2 max related poorly (r=.40) to MT. Hyperoxia resulted in no stat sig diffs between groups for either RT or MT. It appeared that possible O_2 deprivation in the CNS was not importantly related to psychomotor speed among the Ss studied.

61. FRYE, M.M. An investigation of internship programs at environmental centers in Pennsylvania. M.S. in Recreation and Parks, 1985, 131 p. (J.E. Elliott)

This study investigated supervisor and intern perceptions of internship programs at environmental centers in PA. 21 environmental centers, 34 intern supervisors, and 41 interns were surveyed. Questionnaires were used to obtain demographic information and supervisor and intern perceptions of reasons for participation, sources of advertising, pre-internship competencies, importance of internship experiences, evaluation of interns and programs, and outcomes of the internship. Frequencies, %, and t-tests were used to analyze the data. Findings indicated that centers offered internships to supplement staff, interns participated in internship programs to establish experience for employment, the reputation of the centers' programs was more important than stipends offered, internship advertisement led to filling intern positions, supervisors identified communication skills as the primary pre-internship

deficiency, and interns at environmental centers were mainly college graduates. Both supervisors and interns identified the need for increased evaluation and feedback for interns. Supervisors and interns were generally in agreement with their ratings of importance of and satisfaction with internship experiences. When compared within groups, supervisors as a group were less satisfied than were the interns.

62. GADDESS, L.A. Knowledge and opinion score comparisons utilizing live and mounted predator programs. M.S. in Recreation and Parks, 1985, 72 p. (J.E. Elliott)

A questionnaire containing cognitive and opinion items concerning predators was developed by the investigator. Ss were 2 HS classes from PA. 35 questionnaires were analyzed. Ss were found to have certain misunderstandings and unfavorable opinions toward predators. On the whole, students were knowledgeable and favorable toward predators, as long as the predators remain in their natural environment and pose no threat to humans. Ss tended not to place human characteristics upon predators in an anthropomorphic sense, although many considered some predatory methods of killing prey more cruel than others. A 2-way ANOVA was done to test for sig between gender scores on the cognitive and opinion items for the mounted and live predator program groups. An interaction was found between gender and mode of presentation regarding opinion scores about predators in that gender sig influenced opinion scores, depending upon the type of predator program conducted.

63. GREGORY. F.H. Professional basketball players' challenges to the legality of NBA policies, 1954-1976. M.S. in Physical Education, 1985, 105 p. (R.A. Smith)

NBA basketball players sought to gain control over their destiny between 1954 and 1976 by legally challenging the NBA's By-Laws and Constitution. The specific rules challenged included the NBA's restrictive player movement rules (player draft and option clause) and the personnel discipline rules against gambling. Several important court cases were examined, including Hawkins v. NBA (1968), Robertson v. NBA (1970), and Haywood v. NBA (1971). The players' lawsuits challenging the player movement rules met

with sig success and led to major changes in NBA By-Laws. However, players' challenges to NBA disciplinary rules against gambling activities were unsuccessful. Generally, players were concerned about short-term personal gain, while the NBA officials looked to the long-term existence of the league. The NBA generally settled out of court to preserve its rules when players were about to win in the courts. The result was that the NBA maintained its strict discipline standards for its personnel, while the players obtained sig more freedom in their ability to change teams. In the process the NBA, the players' union, emerged as the united voice of the players. Although the NBA gave up some control over player movement between 1954 and 1976, it was able to maintain most of its basic methods of operation despite negative legal implications.

64. GROSS, T.S. Effects of surface cushioning on the ankle during vertical jump landings. M.S. in Physical Education, 1985, 100 p. (R.C. Nelson)

Ss (11 male recreational basketball players) jumped barefoot on 3 landing surfaces: cast aluminum, tartan rubber, and midsole foam. Ss performed symmetric countermovement vertical jumps, touching a bar set at 90% of their max vertical jump reach. 3 measurement techniques were utilized: collection of peak transient accelerations proximal and distal to the ankle with externally mounted accelerometers; collection of resultant vertical force with a piezoelectric force platform; and measurement of calcaneal and plantar/ dorsiflexion motions of the ankle with highspeed cinematography. Data were examined across landing surface and landing style (heel contact landers (n=7), metatarsal only landers (n=4)). Landing surfaces did not produce stat sig diffs in peak acceleration, vertical force, or joint kinematics. Peak calcaneal acceleration ranged between 25 and 70 g's, while peak tibial acceleration ranged between 10 and 30 g's. Decreased range of tibial acceleration illustrated the ability of the body to damp transients as necessary. Metatarsal landers experienced similar peak calcaneal accelerations as heel contact landers, but recorded 20% less peak tibial acceleration and max vertical force.

65. HALL, L.F. Socio-economic factors and leisure activity participation among blacks. M.S. in Recreation and Parks, 1985, 87 p. (H.M. Lundegren)

The number and type of leisure activities in which Blacks engage were examined. A questionnaire and leisure activities blank were administered to obtain relevant background information and leisure activity participation over a 12-mo period. Chi square analysis of the data obtained from 124 Black employees of Springfield Hospital Center, Sykesville, MD, suggests that selected socio-economic factors have an impact on leisure activity participation.

66. HAYFORD, J.L. Perceptions of leisure education held by leisure service practitioners and students. M.S. in Recreation and Parks, 1985, 94 p. (P. Farrell)

Perceptions of leisure ed were examined to determine whether conceptualization inconsistencies might be a possible detractor from leisure ed movement. 2 study groups were studied: the practitioner group consisted of 106 members of the PA Recreation and Parks Society and the student group consisted of 71 undergraduate Recreation and Parks majors at The PA State University. The Survey of Leisure Education, a mail questionnaire, was developed and used to measure 3 areas of leisure ed perception: 1) goals, 2) responsibility of possible providers, and 3) skills needed by leisure educators. Data collection occurred from December 1984 through January 1985. For the study groups, sub-elements within each of the perception areas were rank ordered using the Friedman 2-Way Analysis of Variance. The Spearman Rank Order Correlation was employed to detect disagreement between the study groups. Controls for diffs in definition of leisure were used to maximize the power of the stat tests. No diffs were found between practitioners and students regarding their perceptions of leisure ed in the 3 measurement areas. It was concluded that diffs did not exist in conceptualizations of leisure ed and thus are unlikely to detract from the leisure movement.

67. HOGAN, R.A. Beliefs about nature centers among Shaver's Creek Nature Center members/visitors and nature center nonvisitors. M.S. in Recreation and Parks, 1985, 96 p. (J.E. Elliott)

This study investigated beliefs about the existence of ed and REC participation and activity patterns, social aggregate characteristics, and perceived constraints related to nature center visitation among 50 of the PA State University's Shaver's Creek Nature Center members/visitors and 99 nature center nonvisitors. Marketing-related research data, including outdoor REC participation and activity patterns, social aggregate characteristics, and perceived constraints related to nature center visitation, were examined. A telephone survey was conducted with randomly selected Ss, age 18 or older, who were not PA State University students. Nature center visitors had sig diff beliefs than nonvisitors about the existence of ed and REC opportunities at nature centers. Visitors held more positively measured beliefs about these opportunities, and both groups held stronger beliefs that ed rather than REC opportunities existed at nature centers. Also, nonvisitors were not aware of the variety of activities offered, and their informational belief base about nature centers was more focused on nature and natural objects and nature walks when compared to visitors. A factor analysis and t-tests were conducted on belief statements, and frequencies and % were compiled on other data. Results indicated that nonvisitors are not aware of the variety of activities and opportunities offered at nature centers, and that poor accessibility is an importantly perceived attendance constraint among visitors and nonvisitors.

68. HUNDLEY, J.C. Backgrounds, academic achievements, and attitudes of black intercollegiate athletes from universities differing in racial composition. M.S. in Physical Education, 1985, 120 p. (L.I. Magnusson)

The background factors, academic achievements, career aspirations, and attitudes of 277 black and white football players were examined to determine if a relationship existed between these variables and the racial predominance of the university's population. Ss were enrolled in institutions with 10,000 undergraduate students. For half of the institutions, a min of 70% of those students were black and for the other half a min of 70% of those students were

white. Frequencies, percentages, and X^2 values were calculated to determine if a relationship existed between the race-type of institution variable and Ss' responses to the statements on the instrument. Black athletes attending predominantly black institutions of higher education had higher academic and career aspirations; believed academic success to be more sig; had higher perceptions of their ability to succeed; and believed their coaches and instructors had a more sincere interest in their academic success than did black athletes attending predominantly white institutions. Black athletes attending predominantly white universities perceived the academic and the social environments to be more difficult than did their counterparts in black institutions.

69. JONES, A.W. An exploratory study of the etiology of cigarette smoking among kindergarten through fourth-grade schoolchildren. D.Ed. in Health Education, 1985, 193 p. (R.E. Shute)

The data were collected with newly developed survey instruments which were validated as to their reliability and validity. The children's smoking behaviors were analyzed within the context of 3 conceptual models: Baltes, Reese, and Lipsitt's (1980), "Life-Span Developmental Psychology," Bandura and others (1972) "Social Learning Theory," and Thomas and Chess's (1981) "Role of Temperament in an Individual's Development." Selected smoking variables were explored to discern whether any linear relationships emerged. Ss were taken from a convenience sample of 210 K through 4th grade school children and their parents from the Penn-Delco School District in Delaware County, PA. Several sig findings were obtained. First, as older children were examined, the prevalence of cigarette usage increased. Second, children's initial contact with cigarettes may occur at young ages, and in this study, 50% of the children who tried cigarettes experimented before the age of 6. Third, children's behaviors correlated with mothers', friends', or best friends' smoking. Fourth, the children's perceptions that parents would be angry if the child smoked cigarettes appeared to discourage such actions. Yet, there were fewer experimenters in this investigation than in previous prevalence studies. Therefore, why this may have occurred was explored.

70. JONES, C.I. The demise and revival of tennis in the modern Olympic Games--1924 and 1984. M.S. in Physical Education, 1985, 142 p. (J.A. Lucas)

Olympic tennis made its debut with the first modern Olympic Games held in Athens, Greece, in 1896. Olympic tennis competition continued through the Paris Games of 1924. In the ensuing yrs, tennis was eliminated from the Games, due to disagreements between the International Lawn Tennis Federation (ILTF) and the International Olympic Committee (IOC). Both groups felt they should control the organization and management of Olympic tennis. Additionally, the question of amateur status arose. The IOC had strict regulations concerning amateurism, which it would not alter to permit those athletes it deemed professional to be Olympic competitors. Tennis did not reappear on the Olympic program until the Mexico City Games of 1968, when it was a demonstration sport. During the late 1960s and early 1970s, discord between the International Tennis Federation (ITF, formerly the ILTF) and the IOC was still evident. A long-awaited reconciliation between the ITF and the IOC transpired during the late 1970s and early 1980s, thus resulting in the revival of tennis as a demonstration sport in the Los Angeles Games of 1984 and as an official sport in the Seoul Games of 1988. After a 64-yr absence, tennis has been returned to the official Olympic program.

71. KENNEDY, P.M. Eccentric work and its comparative contribution as a training modality in the development of strength and power. D.Ed. in Physical Education, 1985, 117 p. (H.M. Lundegren)

The purpose of this study was to determine the effects of eccentric work and its comparative contribution in the development of power and strength. 3 diff strength training techniques were used and compared. 3 groups of untrained Ss (males and females, n=33) were trained for 10 wks using one of the 3 prescribed methods. Pretest and posttest measures were taken for muscle girths, body fat %, performance on Cybex at 3 diff speeds of arm flexion and leg extension, and 1 RM strength tests using Nautilus machines. Results varied as to testing method used. When Nautilus was used as a testing modality, no sig diffs by group were found. However, males showed a sig greater response to eccentric only training as compared to concentric only and concentric/eccentric. When a Cybex was used as a testing modality,

using 3 diff speeds (30°, 60° and 120° per sec), the concentric only group performed sig better than the eccentric only group or the concentric/eccentric group. For the females, no sig diffs in response to training group were noted; however, the males performed sig better than the females in the concentric only group.

72. LEHR, R.E. The American Olympic Committee, 1896-1940: From chaos to order. Ph.D. in Physical Education, 1985, 296 p. (J.A. Lucas)

The history of the United States Olympic Committee (USOC) has never been accurately recorded, and many errors have passed on to the present day, including statements in USOC literature. All available minutes of the American Olympic Committee (AOC, forerunner to the USOC), correspondence between many of the figures in the early development of the AOC, as well as other salient documents were researched, and a presentation of the factual history and an analysis of the events surrounding the Olympic organization's growth from 1896 to 1940 could be presented. In the AOC's development from 1896 to 1920, a number of individuals guided the organization formation. James E. Sullivan was the most sig individual, but he was aided by other notables of the day. Robert Thompson, Caspar Whitney, William Milligan Sloane, and James E. Curtiss were a few of those gentlemen. After 1920, the AOC was structured in a more business-like manner, primarily because of events surrounding transportation to the 1920 Olympic Games, and because the Olympic movement was growing. Gustavus T. Kirby, Frederick Rubien, and Avery Brundage played key roles in the development of the AOC from 1920 to 1940. As a result of this study, the history of the USOC is recorded from its beginning to 1940.

73. LEWIS, M.E. The attitudes of commercial fitness center clientele: An examination of former and current members by importance-performance analysis. M.S. in Recreation and Parks, 1985, 98 p. (F.B. Guadagnolo)

Data were collected from 46 current members and 37 former members of the State College (PA) Racquet Club and Fitness Center. A list of fitness center features was developed through a review of literature, input from management and members of the fitness center, and the evaluator's personal experiences. Data were analyzed through t-tests and

descriptive statistics. Importance-performance ratings were plotted on a 4-quadrant action grid to aid in interpretation of participants' attitudes. Means and frequency distributions revealed consistency between the samples on demographic and activity profile characteristics. Current members assigned higher importance ratings to 26 of the 35 fitness center features than former members. Current members rated only 1 feature sig higher ($p < .05$) than former members. Former members did not assign sig higher importance ratings to any features. When performance ratings were compared, current members rated 16 features higher than former members, and former members rated 17 features higher than current members. No sig diffs were found at the .05 level using the 2-tailed test. The importance-performance action grids were useful in identifying critical features of the fitness center.

74. LITTLE, S.L. Conflict resolution and decision-making among volunteer organizers of a community leisure event. Ph.D. in Recreation and Parks, 1985, 246 p. (P. Farrell)

The decision-making behaviors for volunteer organizers of a major community leisure event for a 17-yr period were studied. The criteria for the analysis were based upon a conflict resolution process theory as described by Deutsch (1973), Blake and Mouton (1979, 1983), and Sherif and Sherif (1967). The analysis was used to further develop a REC program model which links individual-level leisure behavior and outcomes to actions of social groups. The 3 general methods for data collection were: (a) review of archival records; (b) participant observation; and (c) survey (interview schedule). It was concluded from this study that cooperative, rather than competitive, conflict resolution processes were those which were critical to the programming of a successful leisure event. It was further concluded that there were a number of conditions which contributed to the use of cooperative resolution processes. These were as follows: the organizers operated from a weak bargaining position; the process for implementation of the event was so large that it could not be done by 1 community group alone; the event was owned by several community groups; there were repeated successes over time in conflict resolution; and the cooperative resolution processes occurred between functionally related groups.

75. LUNDY, D.H. The effects of monitoring response-produced feedback on the psychological refractory period. M.S. in Physical Education, 1985, 80 p. (R.W. Christina)

This study investigates the effect of monitoring response-produced feedback from a first response on the reaction time to the second of 2 closely timed signals. 8 right-handed males were tested in a within-Ss design. On all test trials, the S responded to 2 tones--a right-hand response to the first tone and a left-hand response to the second tone. One factor had trial blocks vary as to the response required to the first tone. In one condition, the response was to simply lift a hand-held stylus from the starting position. The response in the other condition was to move the stylus from the starting position to hit a target. The second factor varied the interstimulus interval (ISI = 86, 144, 203, or 664 ms). The response to the second tone was always a button release with the left index finger. The results showed that for the reaction time to the second tone, there was an interaction between the first response condition and the ISI. For short ISIs, RT2 was greater when the first response was to hit the target than when the first response was to lift the stylus; at the longest ISI, there was no diff.

76. McGLAUGHLIN, E.J. A survey of functional skills and course-content areas expected of entry-level health educators in a health promotion worksite. M.S. in Health Education, 1985, 54 p. (W.F. Alles)

The purpose of this study was to generate a list of functional skills and course-content areas generally expected by corporate health promotion practitioners (managers) when hiring entry-level HE graduates from professional preparation programs. The survey used to obtain the information was designed by obtaining material from 4 sources: 2 sources involved a review of the literature; 2 sources involved conversations with faculty members and advisors in the College of HPER and with 3 current corporate health promotion practitioners (managers). The survey was distributed to 53 randomly selected health promotion managers throughout the US who had given verbal consent over the telephone. 49 surveys were returned; however, because of insufficient data on 3 surveys, only 46 were analyzed. Treatment of the data included item analysis of the 33 skills and 63 course-content

areas by M scores and correlations. Anecdotal patterns of professional preparation of corporate health managers, projected future trends in corporate health promotion, and suggested non-coursework preparation for college students were discussed. The rank-ordering of the 33 skills and 63 course-content areas yielded similar results, regardless of health promotion managers' professional preparation. These results indicate that managers view the rated skills and course-content areas with widespread agreement for functional skills expected in a health promotion worksite.

77. MIKANOWICZ, C.D. An evaluation of a rural adolescent pregnancy and parenting program. M.S. in Health Education, 1985. 218 p. (W.F. Alles)

This study was an investigation of whether counseling and ed services can be delivered effectively in a school and home setting in rural communities located in Cameron, Elk, McKean and Potter counties, PA. Using Project RAPPORT, a community network program designed to reduce the widely recognized adverse health and social consequences of adolescent pregnancy through the use of programs in schools and in homes, the study was carried out between January 1, 1983 and September 30, 1984. During this time, the RAPPORT program enrolled 112 pregnant adolescents. All the adolescents who participated in the study were enrolled in the RAPPORT program and were under 20 yrs of age. The findings were: linkage agreements among health, social, and educational agencies/providers are an efficient and effective method of providing a comprehensive service to pregnant adolescents; the RAPPORT model provides for an effective delivery of services to pregnant adolescents in a rural setting; and the RAPPORT staff successfully met the health, social, and ed needs of the clients served.

78. MORDECAI, D.E. The relationship between perceived peer and family social support and self-esteem of college-age individuals. M.S. in Health Education, 1985, 47 p. (G.E. Cole)

The Rosenberg Self-Esteem Scale and questions used to assess perceived family social support were administered to 683 undergraduate students enrolled in 1-credit HE courses. In addition, demographic information was elicited from the Ss. Pearson product-moment correlations were used to assess the nature and extent of the relationships between self-esteem

and perceived peer social support; perceived family social support; and perceived peer and family social support. Analysis of the data revealed positive sig ($p = .0001$) correlations between self-esteem and all measures of social support used in this study. Perceived peer and family social support was more highly correlated to self-esteem than either perceived peer social support or perceived family social support, individually. For perceived peer social support and perceived family social support, approximately equal correlations to self-esteem were revealed.

79. PARKER, J.J. The care and use of live animal collections in environmental education. M.Ed. in Recreation and Parks, 1985, 108 p. (J.E. Elliott)

The maintenance and use of live animal collections has become a widespread practice among environmental ed centers. However, sources of information and guidance for the practitioner were found to be widely scattered over a number of disciplines. The literature from various fields was reviewed, including environmental ed and interpretation, and developmental psychology, clinical psychology, zoo design and management, animal welfare, veterinary medicine, herpetology, and law. The theoretical bases for the practice were presented in discussion of public attitudes and knowledge of animals, the effectiveness of live animal interpretation, and the debate among practitioners over the use of live animals. Practices reported as acceptable by authorities in each field were then reviewed, and recommendations proposed for the care, management, and educational use of live animal collections in environmental centers. The findings indicate a need for vigorous ed efforts to improve public attitudes towards, and knowledge of, certain animals. Techniques for maintaining live collections of reptiles and amphibians, and for their effective use in meeting ed objectives were described. Other practical considerations discussed included selection of species; legal aspects (including liability); and provision of necessary facilities, personnel, and procedures for proper care and management.

80. RAFFENSPERGER, L.M. The effects of participation in an eight-week music and movement program on the self-concept of trainable mentally impaired children. M.S. in Recreation and Parks, 1985, 80 p. (H.M. Lundegren)

The 19 mentally impaired Ss were students from Wood County's

Beechwood Elementary School in Parkersburg, WV. The exp group (n=11) participated in a music and movement program that was scheduled for 2, 30-min and 1, 45-min sessions each wk for 8 wks. The control group (n=8) participated in storytelling which met at the same time as the exp group. Fisher's Self-Concept Picture Test, the Mann Whitney U test, the Wilcoxon matched-pairs, signed-ranks (T) test, and the Spearman Correlation Coefficient (r_s) technique were used to analyze the data and determine the reliability of the instrument used. These analyses produced sig results for the between-group comparisons. For the within-group comparisons, a sig diff in a positive direction was obtained for the group participating in the music and movement program, and a sig diff in a negative direction was obtained for the group participating in the storytelling program. The instrument was found to be highly reliable (.94) for a sample of trainable mentally impaired children. Based on these data, the investigator concluded that participation in an 8-wk music and movement program yields gains in the self-concepts of the population under study.

81. RODGERS, M.M. Plantar pressure distribution measurement during barefoot walking: Normal values and predictive equations. Ph.D. in Physical Education, 1985, 250 p. (P.R. Cavanagh)

This study was conducted in order to establish normal plantar pressure values for comparison to a pathological sample, and to construct predictive models of pressure data. A 1000-element piezoceramic pressure platform was used to collect plantar pressure data from 60 male Ss, 40 to 81 yrs of age. 3 trials of data were collected from 1 foot of each S during 2 conditions: first step onto the platform from a standing position; and mid-gait step onto the platform. Physical measurements were incorporated in regression analyses. Results showed wt, arch index, and ht to be the strongest predictor variables for regional plantar peak pressure and impulse of the variables used in this study. Regression equations for the arch, ball, and toe regional peak pressures and impulses provided limited prediction abilities. The regional peak pressures and impulse values provide a database of normal values for the first step condition and for the mid-gait condition. Based on the 95% confidence limits, the upper limit of normal over all regions would be 519 kPa for peak pressure and 33% for impulse. Results suggest that inference from first step data to mid-gait data is feasible

using ratio relationships. Regional pressures taken from mid-gait collection were an average of 1.1 times those taken in the first step condition.

82. ROSE, D.J. Choosing between movement sequences: The effect of response-choice similarity upon the underlying programming operations. Ph.D. in Physical Education, 1985, 142 p. (R.W. Christina)

2 CRT exps were conducted bto study the nature of the underlying programming operations guiding choices between alternative movement sequences which diff with respect to response-element similarity and length. The exp task in both exps required Ss (n=16) to make a choice between 2 sequential key-pressing sequences. A 2 X 2 X 4 (S-R Mapping X Hand X Response Condition) factorial design with repeated measures on the last factor was used to analyze the main dependent measures of CRT, interresponse duration, and key dwell-time. The data were analyzed by means of analysis of variance (ANOVA) procedures, a-priori contrasts and complex multiple comparisons tests for trends. 3 major conclusions emanated from the exp findings of Exp 1 and 2. First, the time required to plan or program a forthcoming movement sequence choice increases linearly as the total number of response-elements (subprograms) comprising both alternative movement sequence choices increases. Second, programming time is not reduced as a result of increasing the number of common response-elements shared by the alternative response-choices in corresponding serial positions. Third, all subprograms comprising the required movement sequence are identified and the plan for action completed prior to the sequential execution of the first and subsequent subprograms comprising the movement sequence to be performed.

83. SNOWBERGER, C.E. A study of the differences between nature center users and other visitors to the Stone Valley Recreation Area. M.S. in Recreation and Parks, 1985, 130 p. (G.C. Godbey)

This secondary analysis was based upon data collected from a study by the PA State University's (PSU) Recreation and Parks Dept. The analysis sought to discover diffs between users of the nature center and REC area at PSU's Stone Valley Recreation Area (SVRA) in regard to demographics and usage. Relationships among 4 user groups were tested: REC area use, nature center use, repeat use, and casual use. Each of these

groups was analyzed in regard to distance from SVRA, S's age, S's ed level, S's income level, university affiliation, person with whom the S usually visited SVRA, directness of travel, and source of information about happenings in SVRA. 80 relationships were tested using X^2 analysis. The REC area user was typically 21-30 yrs of age, and had some yrs of formal college ed. The majority of repeat use of the SVRA was from PSU students. These Ss typically heard of happenings from friends and traveled to SVRA with friends. Those users who visited SVRA with friends had a high likelihood of becoming repeat visitors. The nature center user typically was 31-40 yrs old and had had more than 16 yrs of formal ed, although not necessarily from PSU. PSU alumni accounted for repeat use of the center, while current PSU students accounted only for casual use. Repeat use of the nature center was from Ss who were likely to visit the center with their spouses and children.

84. SORG, J.A. An exploratory study of type face, type size and color paper preferences among older adults. M.S. in Recreation and Parks, 1985, 53 p. (F.B. Guadagnolo)

The study was conducted to determine what type combination and color of paper older adults prefer for reading promotion materials such as newsletters and flyers. 8 combinations of type face, type size, and letterform as well as 7 colors of paper with print were examined for preferences as related to ease of reading for older adults. Additionally, paper color without print was examined for preferences in regard to attractiveness. 17 men and 35 women, ranging in age from 52 through 99, residing in long-term care facilities in central PA served as Ss. The Ss were interviewed by the researcher regarding type combination and color preferences between June and July, 1984. One-sample chi-squares and Kruskall-Wallis analysis was utilized to determine diffs in preferences. The following sig results were found: Helvetica or Century Schoolbook, 14 point, all capitals were the preferred type combinations for ease of reading; Century Schoolbook, 12 point, lower case was considered the "most difficult to read"; blue was the color "liked" without print; goldenrod was the color "disliked the most" with or without print; and the color of paper preferred for reading once print was added was white.

85. STOKES, L.R. A comparison of metabolic costs while walking and carrying hand weights utilizing normal and vigorous arm swings. M.S. in Physical Education, 1985, 100 p. (H.M. Lundegren)

VO_2 and stride frequency (SF) were measured during treadmill walking at 4.8 and 6.4 km/h under the following treatments: walking, walking carrying 1.36 kg hand wts, and walking with vigorous arm swings carrying the same wts. Ss, 20 trained men aged 24 to 43 yrs, performed all 6 treatments in random order for 8 min each during 1 testing session. Ss rested between treatments until their HRs returned to within 10% of resting values. Values were determined each min as follows: SF by timing 30 strides, HR from an EKG strip, and VO_2 ($ml/kg \cdot min^{-1}$) measured continuously. Data reported were the 7th and 8th min averaged. During walking with vigorous arm swings, VO_2 values were sig greater and SF values were sig lower (.05 level, ANOVA and DMR test) than the other two treatments within a speed. VO_2 and SF values were sig greater for all treatments while the Ss walked the faster speed (.05 level, dependent t-test). Carrying 1.36 kg hand wts increased the energy cost of walking when accompanied by vigorous arm swings. This effect is not evident when hand wts are carried during normal walking. SF decreases when vigorous arm swings are performed during normal walking.

86. TARTERA, V.P. A comparison of obese and normal-weight women concerning the knowledge levels of nutrition and weight control. M.S. in Health Education, 1985, 76 p. (J.M. Eddy)

This study assessed the knowledge levels of obese and normal-wt individuals on the subjects of nutrition and wt control. The Ss consisted of 58 women between the ages of 25 and 65 yrs old, who were recruited on a volunteer basis. Ss were termed obese based upon their being 20% or more above the "normal" wt listed for the ht in the Metropolitan Life Insurance Co.'s ht-wt chart, and 35 Ss were termed "normal" wt using the same chart. Data were collected by means of an instrument containing a 50-item nutrition knowledge questionnaire and a 12-item wt control knowledge questionnaire, and a 2-item demographic section concerning the age and wt of the Ss. Both the normal-wt group and the obese group showed no diff in the knowledge of nutrition or wt control. The obese group did better than the normal-wt group in the concepts of "basic nutrition principles" and "sources of nutrients," whereas there was no conceptual diff between the 2 groups for the wt control questions.

87. VOJTECKY, M.A. A correlational investigation of body image, locus of control, and anxiety with implications for health education. M.S. in Health Education, 1985, 61 p. (W.F. Alles)

Ss who voluntarily participated in the study were 147 PA State University undergraduate students enrolled in HE 19 (Man and Disease) during fall semester 1984. The instruments used consisted of 3 separate scales. For data concerned with body image, the Body Cathexis Scale (Secord & Jourard, 1953) was utilized. Locus of control data were obtained using the Multidimensional Health Locus of Control Scale (Wallston, Wallston, & DeVilles, 1978). Data concerned with perceived anxiety levels were obtained using the Taylor Manifest Anxiety Scale (1953). Data collected produced 3 scores for each S: body image, locus-of-control orientation, and perceived level of anxiety. Pearson product-moment correlations were calculated on these data, along with coefficients of determination (r^2), and the relationships were tested for stat sig using a 2-tailed t-test. The data were cross-tabulated as well to produce frequency data showing how the Ss completed the survey. The correlational analysis showed sig correlations between the variables. Body image and locus of control were positively correlated (r=.034) and the relationship was determined to be stat sig at p=.001. Locus of control and anxiety, and body image and anxiety were found to be inversely correlated (r=-0.38 and -0.62, respectively). These relationships were also determined to be stat sig at p=.001. The findings of this study suggest that the variables of body image, locus of control, and anxiety may be valuable in providing effective stress management programs, and are important to professionals who treat the anxious reactive personality.

88. WALES, D.N. The effects of tempo and disposition in music on perceived exertion, brain waves, and mood during aerobic exercise. M.S. in Physical Education, 1985, 91 p. (D.V. Harris)

The tempo (bpm) and disposition (mood) in music were controlled in order to determine their effects on beta wave production (EEG), perception of exertion (RPE), and mood states (POMS) while riding a bicycle ergometer. 24 avid male cyclists between the ages of 19 and 28 participated in the study. Ss participated in 4 sessions: 1 sub-maximal stress test and 3 treatment conditions. A PWC 170 on a bicycle

ergometer was used to predict a workload corresponding to 65% of their predicted max aerobic capacity. For the groups, music that either had a positive or negative disposition was played. All Ss exercised in no tempo, slow tempo, and fast tempo conditions, and pedaled for 30 min while listening to music via stero-headphones. RPE, HR, and EEG were recorded during the last 10 secs of every 5 min. POMS were taken pre- and post-exercise. An ANOVA with repeated measures was made on each dependent variable. Results showed that music and exercise produced left hemisphere lateralization of EEG activity. The fast positive music produced sig more relative hem beta activation than fast negative music. Positive disposition sig lowered levels of anger, fatigue, and depression. Ratings of RPE showed a nonsig diff between all conditions. The findings suggest that fast positive music facilitates a "quieter" right hemisphere and positive emotions during aerobic exercise.

89. WALSH, M.A. The female executive: Participation in physical fitness activity and its effect on physiological and anthropometric variables. M.S. in Physical Education, 1985, 79 p.

29 female executives served as Ss to investigate the effects of participation in regular fitness regimens (RFR) on physiological and anthropometric variables. Aspects and factors of participation were also assessed. Ss underwent a health/fitness evaluation which included a physical examination, resting ECG, resting BP, body composition measurements, pulmonary function testing, and a graded exercise test. Each S also completed the Exercise-Health Enhancement Questionnaire. Ss were classified as a participator (P) or nonparticipator (NP) in a RFR based on self-reported exercise habits. Independent t-tests indicated that Ps possessed a sig ($p < .05$) higher estimated submax O_2 consumption at PWC_{150}. The Ps were also sig ($p < .01$) shorter in ht. No sig diff existed between the Ps and NPs for the variables of age, wt, % body fat, fat-free body wt, BP, resting HR, VO_2 max, or blood lipids. Further analysis indicated that the 2 groups had similar and dissimilar factor/habits/perceptions of physical fitness activity. The Ps ranked physical fitness as a sig higher priority among other aspects of their lives. Responses to inquiry about reasons for participation and non-participation were varied. Knowledge levels of exercise dimensions were similarly low for both groups.

90. WERTZ, K.M.P. The financial problems associated with cancer in the young adult. M.S. in Health Education, 1985, 55 p. (J.M. Eddy)

20 young adults between the ages of 20 and 45 were selected as Ss. Each S was interviewed using a questionnaire adapted from a financial information form used by the PA Welfare Program. Each S was asked questions concerning his or her family, employment, income, medical insurance, disease, medical costs, and non-medical costs such as loss of wages, transportation, extra lodging, extra telephone calls, and extra food or clothing needed during the illness. In addition, questions concerning family hardships related to the specified condition were asked. These data were collected and analyzed using the case study approach. The 20 case studies were then summarized. The results of the study pointed out several factors which appear to be important in causing a catastrophic financial burden in a family afflicted with cancer. These factors were the length of illness, the economic level, the insurance coverage, and the illness of the major income provider.

91. WOLFORD, C.A. An analysis of the relationship among selected attitudinal, demographic, behavioral, and sociocultural variables and the self-reported drug use behaviors of various school-based populations of Pennsylvania adolescents. D.Ed. in Health Education, 1985, 104 p. (R.E. Shute)

Ss were males and females age 12-19 enrolled in various school-based settings in PA during 1981-83. The participating institutions were Catholic, rural, small-town, suburban, and urban district schools. The data were analyzed using a multiple-correlation regression protocol incorporating the self-reported use of cigarettes, beer, wine, liquor, marijuana, inhalants, PCP, depressants, hallucinogens, and stimulants as the dependent variables. The independent variables were sex, grade level, grade average, feelings held about teachers and classmates, the behavioral intention to use the drug substances, and the time the student spent in academic, sport, and extra-curricular activities. The nature of the school attended by the students served as a control variable. The self-reported drug use of this adolescent sample was highly correlated with the aggregate effects of the attitudinal, demographic, and behavioral variables tested. While the behavioral intention

to use a drug substance was highly correlated with the self-reported use of all drug categories tested, the substance-related behaviors of adolescents are much better explained on a multifactorial basis.

92. ZALES, W. Assessing touch-sensitive computer systems for providing orientation information in a national park. Ph.D. in Recreation and Parks, 1985, 206 p. (H. M. Lundegren)

This study, conducted during the summer of 1984, assessed the viability of using a touch-sensitive computer to provide visitor orientation to a national park. The study was conducted at Sugarlands Visitors Center, Great Smoky Mountains National Park. The focus of the computer program was to provide activity information to parties with limited amounts of time to spend in a park. By developing a menu-driven branching dialogue for the computer, it was possible to assess the activity interests of several party-members at 1 time. Activity interests were incorporated into a suggested itinerary which users could access in the form of a printout customized to their interest areas. The sample was composed of 274 parties. Interviews focused on party demographics, reasons for attraction to the computer, type of information sought, and whether or not visitors would need to seek additional information from other sources. The analyses were descriptive in nature, focusing on who the computer users were, the types of information they were seeking, and their satisfaction with the information they received. The findings suggested that a touch-sensitive computer system is a viable means of assisting park visitors in orientation to outdoor rec resource areas as well as helping them decide how their activity interests can best be met.

PLYMOUTH STATE COLLEGE (A. Bourgeois)
PLYMOUTH, NEW HAMPSHIRE

93. McCORMACK, L.S. The observation and description of the teaching behaviors of college physical education teachers. Ed.D in Human Movement, 1985, 175 p. (L. Zaichkowsky)

The purpose of this study was to determine the effect of interaction analysis upon the teaching behaviors of college physical ed instructors while instructing prospective physical

ed students. The Ss consisted of 2 female and 2 male physical ed instructors who were employed full-time at Plymouth State College in the Health and Physical Education Department. Cheffers' Adaption of Flanders Interaction Analysis (CAFIAS) was the observation instrument utilized for 2 instructors in the exp phase of this study. The other 2 instructors received traditional feedback. The data was composed of 10 observations for each S. The ANOVA and the t statistic were used to analyze the effects of the treatment. Based on the results, it can be concluded that teaching behavior and interaction patterns vary minimally, and feedback with interaction analysis did not bring about a change in behavior where resistance was evident by the teachers receiving this form of feedback. Evidence was produced that indicated favorably that interaction analysis can produce sig changes in total pupil initiation and teacher agency. When comparing gender differences among instructors, it was found that female instructors talked less, questioned more, were less business like, stressed other teaching agencies, and their students contributed more.

PURDUE UNIVERSITY (C. Widule)
WEST LAFAYETTE, INDIANA

94. BAUR, T.S. The role of prostaglanding in the coronary blood flow response to hypoxia in exercise trained rats. Ph.D., 1985, 98 p. (D.L. Corrigan and D.R. Lamb)

95. BOWEL, K.J. Changes associated with an eight month conditioning program on selected physiological, biochemical and psychological variables in adult women. M.S., 1984, 88 p. (D.L. Corrigan)

96. GARDNER, A.W. A longitudinal study of gross efficiency during submaximal exercise in sedentary and active males. M.S., 1985, 73 p. (D.L. Corrigan)

97. HAYES, D.E. Power flow between leg segments in runners of varied ability. M.S., 1985, 53 p. (C.J. Widule)

3 groups of 6 Ss were categorized as elite, recreational, or non-runners, based on their competitive performances and running experience. Each S was filmed running on a treadmill at 10 mph, and the films were analyzed to obtain values for the transfer of energy, or power flow, between the thigh and shank

segments of the leg during the recovery, or swing phase of the running cycle. These power flow values were then analyzed statistically across the entire swing phase and at several intervals within the phase to ascertain whether or not power flow in the leg was a determinant of running ability. Results indicated a sig diff between the 3 groups in regard to the time period over which the flow of power occurs. However, there were no sig diff among the groups regarding actual power flow.

98. MOYNA, N. The role of selected physiological parameters on middle and long distance running performance. M.S., 1985, 73 p. (D.L. Corrigan)

99. PETERS, M.H. Gloucose polymer ingestion and energy substrate usage during a prolonged cycling exercise. M.S., 1985, 59 p. (C. Melby)

100. SALIB, N.M. The effect of caffeine on the respiratory exchange ratio of seperate submaximal arms and legs exercise of middle distance runners. M.S., 1985, 70 p. (D.L. Corrigan)

101. SHARPE, S.R. The effects of different strategic emphases on spatial and temporal accuracy in simple movements. M.S., 1985, 59 p. (C. Melby)

102. YONG, B.Y. The effects of acute exercise on platelet aggregation and platelet glutathiane peroxidose activity in man. M.S., 1985, 56 p. (D.L. Corrigan)

SAN JOSE STATE UNIVERSITY (E. Lindquist)
SAN JOSE, CALIFORNIA

103. ARNOLD, D. Personalized exercise recommendations for healthy prenatal women, a computer application. M.A. in Physical Education, 1985, 129 p. (C.L. Christensen)

A safe, yet effective individualized exercise program was written for healthy prenatal women using a personal computer and available software. A computerized questionnaire was written to establish the individual's current health and fitness status. Model parameters such as training HR limits, individualized energy expenditure necessary for training effects, and equivalent modes of exercise for aerobics were researched. A calisthenic database was set up using an electronic spreadsheet. It consists of kinesiologic tables

which include such information as intensity, no. of repetitions, prime movers and their actions, and specific exercises. A model prescription letter was written using the text formatter. Illustrations of the specific exercises and their actions were drawn with a graphics program. Algorithms were written to connect patient input with the aerobic and calisthenic database. Pascal programs were written to compress the exercise illustrations and format them with texts taken from the calisthenic database. A text formatter was used to imbed pertinent data in the perscription letter. The model worked effectively and can be used as a basis for other types of prescriptions.

104. CHISHOLM, C.H. A comparison of personality traits between successful and less successful female gymnasts. M.A. in Physical Education, 1985, 74 p. (W.F. Gustafson)

The study investigated whether personality profiles differ between successful and less successful gymnasts. Additionally, descriptive characteristics of both groups were studied to explore their influences. Participating Ss included 76 female club-affiliated gymnasts, ages 12 through 16, who had competed for at least 1 yr at Class III level or above. Ss completed the Athletic Motivation Inventory and the Personality Research Form while their coaches confidentially rated each S's potential all-around score. A discriminant analysis was used to determine if selected variables could predict whether gymnasts would become successful based on their coaches' predictions. Results confirm that female gymnasts can be separated through selected personality traits. Successful gymnasts scored sig higher in drive, conscientiousness, and exhibition when compared to their counterparts. Less successful gymnasts scored sig higher in leadership, emotional control, and guilt proneness when compared to their counterparts. All gymnasts scored high in affiliation, determination, coachability, conscientiousness, and trust in addition to scoring low in aggression, autonomy, and dominance.

105. GROKETT, B.H. Caffeine effects on trained and untrained subjects during prolonged physical activity. M.A. in Physical Education, 1985, 72 p. (C.L. Christensen)

The effects of caffeine on endurance performance of 2 diff groups of Ss, 1 trained (max O_2 consumptions (VO_2 max) > 60 ml·kg-1·min-1), and the other group untrained (VO_2 maxs < 55

ml·kg-1·min-1) were studied. Following tests to determine VO max, Ss performed 2 bouts of exercise at 75% VO_2 max for a per of 90 mins on a bicycle ergometer. HR, respiratory exchange ratio, and O_2 consumption data were collected; in addition, the Borg Scale of rating of perceived exertion was administered during the exericse test periods. 60 mins prior to each exercise bout a treatment of caffeine (4.5 mg/kg of S body wt) or a placebo was given each S. MANOVA revealed no sig diff ($p < .05$) between trained and untrained Ss in their response to caffeine and placebo treatments with regard to any of the variables examined. Within the limitations of this study, the following conclusion was made: Caffeine has no selective effect on cardiorespiratory or subjective variables between trained and untrained Ss during prolonged submax exercise.

106. HALL, M.E. A teacher's guide to sexual assault prevention for junior high school girls. M.A. in Physical Education, 1985, 111 p. (S. Reekie)

This creative project sought to provide a coursebook for teaching sexual assault prevention to JHS girls. The teacher's guide contains 4 chapters each of which addresses a specific component of assault prevention: "Adolescent Vunerability to Sexual Assault: An Overview", "Awareness of Sexual Assault", "Building a Positive Self Concept", and "Developing Self-Protective Abilities". Each chapter includes theoretical information, general learning objectives, and suggested activities to facilitate attainment of the objectives. 3 appendices of reference materials for the course, a format of an informational letter to parents, and a sample parental permission slip are also included. All informational material in the booklet was based on, and developed from, multidisciplinary sources of research and literature. The completed booklet was submitted to JHS teachers, counselors, and administrators who evaluated its contents by responding to a questionnaire. This project produced educational resource material which can be used within the school system to confront the problem of adolescent sexual assault.

107. HOLMES, B.L. Comparison of a prediction of maximal oxygen consumption by the YMCA submaximal bicycle ergometer test to a measurement of peak oxygen consumption, M.A. in Physical Education, 1985, 56 p. (C.L. Christensen)

The purpose of this study was to compare the prediction of maximal O_2 consumption (VO_2 max) as determined by the YMCA

Submaximal Bicycle Ergometer Test to a direct measurement of peak O_2 consumption (VO_2 peak). 19 female Ss, ages 23 to 44 (M = 33.1 yrs), performed the YMCA test followed immediately by a graded exercise test to voluntary exhaustion (VO_2 peak). HRs were monitored continuously and recorded during the last 10 secs of each min, and VO_2 peak was determined by standard open circuit calorimetry (r = .42). A correlated t showed no sig diff between predicted VO_2 max and actual VO_2 peak. The absolute individual % error between the predicted and measured values was 19.8%. In addition, the YMCA test overpredicted from 4.7 to 74.5% in 58% of the Ss. The test had a tendency to overpredict less fit Ss and underpredict the more fit Ss. The YMCA test is a poor predictor of VO_2 due to its low coefficient of determination (r = 26%).

108. LOW, M.E. The effects of video game training on the coincidence-anticipation timing of adults. M.A. in Physical Education, 1985, 67 p. (G. Hutchins)

The performance of 2 groups on a Bassin Anticipation Timer was compared. A sample of right-handed right-eye dominant adult nonusers of video games, aged 23-35 yrs-old, were randomly divided into a training group and no training group (N = 24). Each group contained equal no. of males and females. All Ss were pretested on the Bassin Timer. Testing consisted of 100 consecutive trials at a constant speed of 7 mph. A duplicate posttest followed in 4 wks. The training group followed a 4 wk, 3 times/wk training schedule. Training Ss trained on the video game Pac Man for a duration of 30 mins. The no training group played no video games for the duration of treatment. Bassin Timer scores for all Ss were analyzed as gain scores in a 2-factor ANOVA for M CE, M AE, and M VE. Results indicated no sig diff in coincidence-anticipation timing performance between the training group and the no training group ($p > .05$). ANOVA revealed gender had no sig effect on performance ($p > .05$).

109. MARKS, M.C. A history of physical education curricula in Northern California secondary schools and institutions of higher learning 1850-1968. M.A. in Physical Education, 1985, 257 p. (S. Reekie)

110. RARIG, N. Effects of a cross-cultural experiential service program on selected female high school athletes. M.A. in Physical Education, 1985, 62 p. (W. F. Gustafson)

Support was provided for the value of a service component in a sport-based cross-cultural education program. Attitude inventories toward self and toward Mexicans were administered to 10, 15- to 17 yr-old members of a girl's volleyball team 1 day before and on the day of return after the conducting of a 4-day volleyball clinic at an orphanage in Mexico. Q methodology was used to assess the impact of the program on participants; a 56-adjective Q sort was adapted for use with this age group. The 10 x 10 matrix of r was reduced by factor analysis to a 10 x 3 matrix. Factor loading diffs of .05 were reported. 3 diff impressions of Mexicans and 2 of self were identified. Comparisons of before and after loadings on factors showed changes in impressions of Mexicans for all 10 Ss. 5 of the 10 Ss changed impressions of self. The study demonstrated that sports activities can be used to further goodwill among peoples of diff nations, and that by engaging in service to others, participants in cross-cultural programs can feel better about themselves.

111. STONE, D.S. The effects of an adapted exercise program on symptoms of depression in older male and female adults. M.A. in Physical Education, 1985, 45 p. (G. Hutchins)

12 women between the ages of 60 and 81 participated in an adapted exercise program modified to the special needs and abilities of male and female adults over the age 55. 7 women and 1 man between the ages of 60 and 74 participated in a language class. Both groups were given a self-rating depression scale during the first wk of class and again at the end of the 10-wk session. The uncorrelated t revealed no sig diff between posttest depression scores of exercising and nonexercising Ss at or below the .05 level. Results indicated that engaging in an adapted exercise program had no effect on self-rated scores of depression of the older adult.

SLIPPERY ROCK UNIVERSITY (C. Clinger)
SLIPPERY ROCK, PENNSYLVANIA

112. HOKANSON, J.F. The effects of three pedalling frequencies on oxygen consumption while cycling a stationary racing bicycle. M.S. in Physical Education, 1985, 60 p. (G.S. Pechar)

The effects of 3 diff pedalling frequencies (50, 80 and 100

rpm) on VO_2 while cycling on a Univega 12-speed Sportstour bicycle mounted to a Turbotrainer stationary stand were studied. A sample of 15 male, college age, recreational cyclists exercised for 6 min at each pedalling frequency. The speed of the bicycle remained constant at 15 mph. Expired air was collected during the 5th and 6th min of each exercise bout. The expired air was analyzed for % of O_2 and CO_2 using Beckman LB-2 and OM-11 Gas Analyzers. A Telemastery Telemetry Unit was used to monitor HR. VO_2 for each S was calculated and a 1-way ANOVA and Scheffe's f-test were computed using the data. The results of this study indicated a sig diff ($p < .05$) in the amount of O_2 consumed while pedalling at 50 rpm. The pedalling frequency of 50 rpm at a gear of 100.3 in was determined to be the most efficient in terms of energy cost.

113. ZARICK, J. The relationship between selected anthropometric measurements and swimming speed as measured by a 20-yard swim. M.S. in Health and Physical Education, 1985, 52 p. (C. Clinger)

11 anthropometric measurements were taken on 20 male swimmers between the ages of 13 and 18 years. The Ss were also tested for swimming speed. Each S completed 5 trials of a timed 20-yd swim and the best time was used as the measure of swimming speed. All of the Ss used the crawl stroke. A Pearson's r was calculated for each of the 11 anthropometric measurements and the measurement of swimming speed. At for r was then used to determine if any of the r were sig. 4 anthropometric measurements were found to be sig at the .05 level. These measurements were % body fat, trunk breadth, standing ht, and hand length. These 4 sig measurements were then paired with each other and tested with a t for comparison of r. This t was used to determine if there were any diff among the paired r. The sig diff among the paired r occurred between % of body fat and hand length, % body fat and trunk breadth and % body fat and standing ht. All of the other diff among the paired r were not sig. % body fat had an adverse effect on swimming speed. Trunk breadth, standing ht, and hand length all had a positive effect on swimming speed. These measurements were not sig: hand width, foot width, foot length (dorsal), foot length (ventral), upper arm circumference, biacromial measurement and wt.

SOUTH DAKOTA STATE UNIVERSITY (J.E. Lidstone)
BROOKINGS, SOUTH DAKOTA

114. CHO, K.M. A comparison of leadership styles between college and university administrators of physical education in the United States and Korea. M.S., 1985, 64 p. (J.E. Lidstone)

32 Korean physical education administrators and 98 US administrators of physical ed programs completed the T-P Leadership Questionnaire to compare their leadership styles in terms of task orientation and people orientation. A total of 130 of 170 administrators or 76.4% responded to the survey. A Student's t-test for independent samples was calculated. Separate analyses were conducted for each of the 2 dimensions, task orientation and people orientation. Results of the t-test indicated that there was no sig diff at the .05 level of sig and 128 degrees of freedom between Korean and American administrators on the task orientation variable. However, in terms of people orientation, at the .05 level of sig and 128 degrees of freedom, there was a sig diff noted. American administrators had a higher people orientation score than Korean administrators. Even though there was a sig diff in people orientation scores between the 2 countries, the M leadership styles of Korean and American administrators appear in the high task and high relationship quadrant on the Ohio State Leadership Grid.

115. WILLIAMS, P.W. The aggressiveness and drive of football players by position. M.S., 1985, 68 p. (J.E. Lidstone)

201 football players from the North Central Conference schools of Mankato State University, North Dakota State University, Augustana College, and South Dakota State University were asked to complete the Athletic Motivation Inventory (AMI) in an attempt to determine diffs in the drive and aggressiveness of football players by position. The Ss consisted of players involved in the 1985 Spring football practice and who were also on the varsity football team during the 1985 fall season. The Ss were classified by position category as follows: offensive linemen (44), offensive receivers (18), offensive backs (28), defensive linemen (26), defensive linebackers (45), and defensive backs (40). Data were collected using the AMI. Data were analyzed using ANOVA. The ANOVA procedure revealed that there was no sig diff ($p \leq .05$) in the drive or aggressiveness of football players by position. A Student's t-test was also performed to compare offensive players to defensive players on the variables under study. The t-test revealed that there was no sig diff at the .05 level in the drive or aggressiveness of offensive players when compared to defensive players.

SOUTHERN CONNECTICUT STATE UNIVERSITY (J. Agli)
NEW HAVEN, CONNECTICUT

116. CAVALIERI, E.H. The effect of aerobic exercise on the mood states of community seniors. M.S. in Physical Education, 1986, 61 p. (J.A. Finn)

Although substantial research exists regarding the psychological benefits of physical activity, most studies have been conducted with young and middle-aged Ss. This 10 wk study investigated the effect of aerobic exercise on the mood states of community seniors. Normal, healthy seniors 60 yrs of age or older volunteered as Ss. The exp group (n=29) participated in a 1 hour exercise program 3 times a wk for 10 wks. The control group (n=28) did not participate in a regular program of exercise for the duration of the study. The Profile of Mood States inventory was administered to all the Ss at the beginning and end of the study. Pre and posttest M scores were determined and a MANOVA was performed to test the hypothesis at the .05 level of confidence. The results showed no sig diff in mood states between exercising and nonexercising seniors.

117. FEDE, M.B. Running and its effects on mental parameters. M.S. in Physical Education, 1986, 93 p. (J.A. Finn)

The mental parameters that may be affected by running were identified to develop a clearer understanding of their relationships with altered states of consciousness. Data regarding endorphins, psychotherapy and biofeedback, brain laterality, running as an anti-depressant agent, and running addiction were obtained through an extensive review of current literature. The data were reviewed and synthesized. The Gestalt approach was used in making intuitive judgments based on the literature. It was concluded that all of the areas studied do have an effect on the condition, known as runner's high.

118. KEMLER, D.C. Level of athletic, instrumental, and reactive aggression between contact and non-contact, male and female high school athletes under pre- and post-testing conditions. M.S. in Physical Education, 1985, 55 p. (D.M. Metrelis)

Studies involving youthful players and sport specific participation regarding aggression levels are non-existent.

Levels of reactive, instrumental and athletic aggression expressed among male and female, contact and non-contact varsity HS athletes were compared between non-contact and contact sport participants; between male and female athletes; and between pre- and post- competition tests for all Ss. The Bredemeier Athletic Aggression Inventory (BAAGI) was administered to each S (N = 520) before and after 3 athletic events identified by the coach as being closely contested. M scores for each S were determined. An ANOVA was computed to test each hypothesis at the .05 level. Results demonstrated that contact and male Ss expressed lower levels of instrumental aggression and greater levels of athletic and reactive aggression than did non-contact and female athletes. Pre-competitive scores were greater in instrumental aggression and lower in reactive aggression than were post-competitive scores. These results indicate acceptable expression of aggression is displayed most by non-contact and female athletes and that competition increases undesirable aggressive behavior for all Ss.

119. SCAVONE, D.J. Left ventricle size in weight lifters using anabolic steriods. M.S. in Physical Education, 1986, 58 p. (J.A. Finn)

The influence of anabolic steriods on left ventricle hypertrophy in athletes is unknown. Electrocardiographic and echocardiographic measurements were evaluated in 12 male weight lifters using anabolic steriods and compared to weight lifters not taking these drugs (N=12) as well as to a normal, healthy, inactive control group (N=12). QRS complex and left ventricular M values were determined and a simple ANOVA was performed to test the hypotheses. Results showed no sig diff in QRS complex measurements between groups. Sig larger left ventricular posterior wall dimensions in the inactive control group were determined by echocardiographic analysis. All 3 groups demonstrated M values that were considered normal by echocardiographic criteria. No sig diffs were found in left ventricular posterior wall measurements between the natural weight lifting group and the steriod group. These data indicate the use of anabolic steriods have no effect on left ventricle hypertrophy among weight-training athletes.

SPRINGFIELD COLLEGE (W. Sullivan)
SPRINGFIELD, MASSACHUSETTS.

120. CAIRO, R. Anabolic steriods and their relationship to liver functions. M.S. in Cardiac Rehabilitation, 1985, 94 p. (E. Burke)

The purpose of this investigation was to examine the effects of anabolic steriods on liver functions in healthy bodybuilders. Ss were 18 male bodybuilders, 9 of whom were cycling on anabolic steriods and 9 of whom were not using anabolic steriods. A blood sample was drawn from each S and 8 diagnostic tests to assess liver functions were performed with the SMA 12 technique. 8 independent t ratios were calculated at the .05 alpha level. The results indicated that 6 of the independent t ratios were not sig and 2 of the independent t ratios were sig. Further comparison of the data revealed that the anabolic steriod group had M levels of 3 emzymes at or above the medical age-adjusted norms. Additionally, 3 Ss in the anabolic steriod group had levels of 2 enzymes above the norms, whereas the non-steriod group had 1 S with 3 levels above the norms and 1 S with 2 levels above the norms. The results of this study imply that the use of anabolic steriods by healthy bodybuilders may cause liver dysfunction.

121. CARDINAL, B. The self-defense and self concept. M.S. in Physical Education, 1985, 78 p. (W. Sullivan)

Ss for this investigation were the 150 members of the female plebe class at West Point. Ss were given the Tennessee Self Concept Scale (TSCS) before the first mandatory course in self-defense, and after the 18 lesson course. Ss were then divided by the course grade received. Through random selection the groups were made equal in number and a 5 x 2 mixed design ANOVA with a repeated measure on the second factor (pre and post test scores on the TSCS) was performed. Scores on the moral-ethical subscale were sig lower ($p < .05$) between the pre and post test, but not for the overall self concept scale or any of the other subscales. The C grade group varied sig ($p < .05$) from the C+ and C- grade groups on the total self concept score. The C grade group was also diff from each of the other groups on the family self subscale to a sig degree ($p < .05$).

122. CHEUNG, S.Y. Relaxation training and precompetition anxiety levels of young gymnasts. M.S. in Physical Education, 1985, 95 p. (B. Jensen)

Ss for this study were 18 boy and girl gymnasts from a private gymnastics school. They were randomly assigned to E group and C group according to their gender, age, and gymnastics level. The Ss in the E group underwent progressive relaxation training 3 times per wk for 7 wks. The C group went through the placebo program in which information concerning gymnastics was discussed. All Ss were administered the State-Trait Anxiety Inventory for Children and their HR and BP were measured 3 times before competition and 3 times before practice situation. Eight 2 x 3 univariate ANOVAs with repeated measures on the second factor (testing periods) were used to analyze the data. No diffs ($p < .05$) were found between 2 groups in precompetition state anxiety, precompetition resting HR, precompetition systolic and diastolic BP, and no diffs were found for trait anxiety, resting HR, systolic and diastolic BP taken before 3 practice situations. The only diffs found for any of the dependent variables across testing periods was that precompetition diastolic BP was sig ($p < .05$) lower at the first gymnastics meet. There were no sig ($p < .05$) interactions between the 2 exp conditions and the testing periods with respect to any of the 8 dependent variables.

123. CHRISTELIS, E. A comparison of two methods of assessing percent body fat: skinfold measurements and visual estimation. M.S. in Physical Education, 1985, 68 pp. (E. Burke)

Ss for this study were 44 female volunteers from the Greater Springfield area. Percent body fat was assessed for each S by an underwater hydrostatic weighing method (criterion variable), a skinfold caliper method (predictor variable), and a visual estimation method (predictor variable). Slide photographs of each S were assessed for % body fat by an expert rater and a novice rater. No sig ($p > .05$) diff was found. Pearson product-moment correlation coefficients were computed for the criterion variable and the 2 predictor variables. The correlation coefficient for underwater hydrostatic weighing results and skinfold caliper measurements was .8767. The correlation coefficient for underwater hydrostatic weighing results and visual estimation ratings of the expert was .8105, and the correlation coefficient for underwater hydrostatic weighing results and visual estimation ratings of the novice was .7914. The correlation coefficients were transformed into Fisher z scores and tested at the .05 level of sig. No sig ($p > .05$) diffs were found among the correlation coefficients.

124. CONDON, P. The effect of warm-up on reaction time, movement time, and response time of the grab start in swimming. M.S. in Exercise Physiology, 1985, 66 p. (E. Burke).

The study was conducted to test the hypothesis that reaction time, movement time, and response time of the grab start would be faster following warm-up. Ss were 15 young competitive swimmers, both male and female. All Ss performed 6 trials of the grab start; 3 without warm-up and 3 following a 20 min swimming warm-up. A repeated measures ANOVA revealed no sig ($p > .05$) diffs in reaction time, response time and movement time for trials performed with warm-up as opposed to those trials performed without warm-up. Computation of the reliability estimate for each of the dependent variables showed that Ss performed more consistently in the trials preceded by warm-up.

125. DAVAKOS, H. Politics during the formative and initiative years of the Olympic Games: 1883 - 1896. D.P.E. in Physical Education, 1985, 173 p. (J. Genasci)

This investigation set out to determine if Baron Pierre de Coubertin attempted to revive the Olympic Games for nationalist or internationalist reasons. In the course of this investigation, the possibility of Coubertin exploiting and manipulating the unstable political situation in France and Hellas, as well as the low status of physical ed and sport in both countries, was investigated. An additional investigation was made, to determine if Hellenic physical educators' expectations during the staging of the first modern Olympic Games were fulfilled or not. Data collected were obtained in United States and Hellas, and were analyzed with application of considerable amount of internal and external criticism. The findings of this investigation determined that Coubertin revived the Olympic Games for nationalist purposes rather than internationalist. Additionally, it was found that Coubertin exploited and manipulated the political instability present in France and Hellas as well as the physical ed and sport in both countries. In the case of Hellenic physical ed and sport, Coubertin acted in interaction with various Hellenic political parties. Last, it was found that due to the low status of Hellenic physical ed and its exploitation and manipulation by Coubertin and the various Hellenic parties, the expectations of the Hellenic physical educators never materialized.

126. DUADE, C. The validity of age predicted maximal and submaximal heart rates in women of various ages and activity levels. M.S. in Physical Education, 1985, 105 p. (W. Considine)

Ss for this study were 48 female volunteers aged 20-39. All Ss completed a graded exercise test to determine actual HR at 60, 70, 80, 90, and 100% of max heart rate (HR_{max}). The age-predicted formula (220-age) for HR_{max} was calculated for all Ss. Two methods (age-predicted Karvonen Heart Rate Reserve (KHRR) and age-predicted % HR_{max} were used to predict HR at 60, 70, 80, and 90% of age-predicted HR max. A series of 2 x 2 x 3 ANOVAS with repeated measures (age-predicted HR methods) was used to analyze the data. No diffs ($p < .05$) were found between the age-predicted $\%HR_{max}$ method and the actual HR at 60, 70, 80, 90, and 100 percent of HR_{max}. The age-predicted KHRR method was sig ($p < .05$) greater than the actual HR and the age-predicted $\%HR_{max}$ at each of the examined percentages.

127. FERNANDEZ, A. Effects of physical training on induced myocardial infarction in older rats. M.S. in Physical Education, 1985, 179 p. (B. Jensen)

60 older (415 g) Wistar rats were randomly assigned to EI, EC, SI and SC groups. The Ss in the E groups underwent a 5 wk swimming training program. The S group remained sedentary. A training effect was demonstrated by the exercised animals. After the training period the EI and SI groups were injected with 50 mg/kg of isoproterenol hydrochloride, the control groups were injected with saline. The mortality rate was 16.7% for EI and 84.4% for SI. No control rats died. A 2 x 2 x 5 ANOVA with repeated measures in the last factor (periods of testing) was used to analyze diffs in plasma CPK levels. No diffs ($p > .05$) were found between E and S groups or control or isoproterenol injected rats. A sig ($p < .05$) smaller ST segment displacement in leads II and III, and Q wave amplitude in AVF was found for E than for S groups. Control rats presented sig ($p<.05$) higher ST in II and III, R wave in AVR, and Q in AVL than isproterenol injected rats. EI showed sig ($p < .05$) smaller Q in III than SI group. Sign (p .05) higher R In II before training, smaller T in II, AVF and V5 after the first injection and smaller Q in II was found than at any other testing period. SI presented sig ($p < .05$) higher ST in V2 and AVF after the second injection and higher ST in V2 before training. No other sig ($p > .05$) changes in EKG between EI, EC, SI or SC were observed.

128. GOMEZ, P. Differences in motor proficiency between children with normal hearing impaired. M.S. in Physical Education, 1985, 92 p. (B. Jensen)

Ss for this study were 30 students from the Austine School for the Deaf, Brattleboro, VT, and 30 normal hearing students from the Oak Grove Elementary School, Brattleboro, VT. The deaf Ss had unaided hearing loss of 26 dB or greater in the better ear. The Ss ranged in age from 4 years 6 months to 14 years. All Ss were administered the short form and an adapted version of the long form of the Bruininks-Oseretsky Test of Motor Proficiency. To determine diffs between the deaf and hearing Ss in motor skills, t ratios were computed for the motor proficiency scores of the 2 groups. Pearson product-moment correlation coefficients were computed to test the relationships between measured hearing loss (in dB) of the deaf Ss and their scores on the motor proficiency subtests. Hearing Ss had M scores sig ($p > .05$) higher than those of the deaf Ss on the following short form variables: Running Speed and Agility, Response Speed, and Composite Value. The same was true for the following variables from the adapted long form: Running Speed and Agility, Balance, and Response Speed. Deaf and normal hearing Ss had M scores that were not sig ($p < .05$) diff on the following short form variables: Balance, Bilaterial Coordination, Strength, Upper-Limb Coordination, Visual-Motor Control, and Upper-Limb Speed and Dexterity. The same was true for the variable of Upper-Limb Coordination from the adapted long form. The relationships between measured hearing loss in dB of the deaf Ss and their motor proficiency scores were not sig ($p < .05$) diff from 0.

129. HARTZOG, R. The cardiorespiratory and psychophysiologic effect of steady state exercise during hemodialysis. M.S. in Physical Education, 1985, 90 p. (E. Burke)

Ss for this study were 4 hemodialysis patients. The Ss included 1 male and 3 females. All the Ss were tested on an interval graded bicycle ergometer program first off dialysis then on dialysis 2 to 3 times a week. The entire study lasted 5 months. HR, BP, pulmonary ventilation, O_2 uptake, and perceived exertion were measured for all Ss during exercise. Graphical and tabular analyses were performed on the dependent variables. In addition a repeated measures correlated t test was used to analyze the data. Graded increases in work load during exercise on dialysis appears to cause the elevation of cardiorespiratory and psychophysiologic responses. No diffs

($p > .05$) were found between off and on dialysis exercise response for the dependent variables.

130. HELWIG, M.S. A comparison of the effects of two intensities of weight training on the percentage of body fat in college females. M.S. in Physical Education, 1985, 48 p. (W. Sullivan)

Ss for this study were 26 volunteer students from Springfield College. The Ss were randomly assigned to 1 of 2 exp groups, high intensity or low intensity weight training. Each group trained 3 times a wk for 7 weeks, completing 3 sets of 8 different lifts at either 90% of 1 rep max (2-4 reps) or 60% of 1 rep max (12-15 reps) at each training session. Percent body fat, body wt, and skinfold and girth measurements were calculated for each S prior to and at the conclusion of the training period. The ANCOVA statistical procedure was used to determine whether there were diffs between the 2 exp groups at the .05 level of sig. There was no sig diff in % body fat changes between the high intensity weight-trained group and the low intensity weight-trained group; therefore, it was concluded that neither high intensity weight training nor low intensity weight training is better at reducing body fat in college females.

131. HOPE, A. The influence of family and peers on participation in sport of Irish females. M.S. in Physical Education, 1985, 130 p. (M. Murray)

The sample for this study was 245 women from the female workforce in 6 institutions in the cities of Limerick and Galway in Ireland. A modified version of the Female Sport Socialization Questionnaire was used to collect data. Independent groups t ratios were used to compare the influences of the socializing agents of family and peers during childhood and of female and male friends and spouse during adulthood on female participants and nonparticipants in sport. Stepwise multiple regression analyses were used to determine whether childhood sport involvement and present sport involvement could be predicted from the influences of the socializing agents on female Ss. The results indicated that the influences of family, individual members of the family (father, mother, brothers, sisters), and peers on sport participation during childhood were sig ($p < .05$) greater for female participants than for nonparticipants. The influences of female friends, male friends, and spouse on sport participation during

adulthood were sig ($p < .05$) greater for female participants than for nonparticipants. The multiple regression analysis revealed that the influences of peers and family were sig ($p < .05$) predictors of childhood sport participation for females. A second analysis indicated that the influence of peers, mother, and brothers were sig ($p < .05$) predictors of childhood sport participation for females. The influences of present male and female friends, childhood sport involvement, and spouse were sig ($p < .05$) predictors of adult sport participation for females.

132. LADDA, S.R. A documentary analysis of women's intercollegiate soccer in New England from 1970 to 1985. M.S. in Physical Education, 1985, 64 p. (J. Genasci)

The purpose of this investigation was to document the history of women's intercollegiate soccer in New England from 1970 to 1985. Research in the area of women's intercollegiate soccer is scarce. Data for this study were primarily collected through library search, personal interviews, and correspondence with coaches. Additional sources which provided information were the minutes of organizations such as the Association of Intercollegiate Athletics for Women (AIAW) and the New England Women's Intercollegiate Soccer Association (NEWISA). A library search focused on locating written material related to females playing soccer. No completed books concerning the history of women's soccer were found, but a few articles were available. Women began playing soccer intercollegiately, as intercollegiate sports are known today, in the early 1970s. New England seems to have initiated the organization of women's soccer. Brown University appears to have had the first women's varsity soccer team. Women's soccer appears to continue to grow in popularity, as evidenced by the number of teams at the collegiate level.

133. LATOUR, M. The effects of anabolic steriods on HDL-C levels in male bodybuilders. M.S. in Cardiac Rehabilitation, 1985, 87 p. (E. Burke)

This investigation examined the effects of anabolic steriods on total cholesterol, high and low density lipoprotein cholesterol, and LDL/HDL ratio in 18 male bodybuilders, aged 19 to 40. The E group consisted of 9 bodybuilders who had been currently using anabolic-androgenic steriods for a 4-week period and who had previously used anabolic-androgenic

steriods. The C group consisted of 9 bodybuilders who had never used anabolic-androgenic steriods. All Ss fasted for 12 hours prior to being transported to Baystate Medical Center for testing. All Ss filled out a training questionnaire and signed an informed consent, after which they submitted to venopuncture for the removal of 20 cc of blood. These blood samples were analyzed for the above-mentioned lipid fractions. 4 independent groups t ratios were computed for the dependent variables. The M LDL-C level and the M LDL/HDL ratio were sig lower in the E group when compared with the C group. The Ms for the E group were also outside the normative ranges for these lipid fractions. This evidence indicates that bodybuilders using anabolic-androgenic steriods are at risk for developing coronary heart disease because of the suppression of HDL-C and a lowered ability to remove lipids from the arteries.

134. READING, E.M. The physiological effects of two different body positions in bicycle ergometry for cyclists and non-cyclists. M.S. in Physical Education, 1985, 105 p. (B. Jensen)

Ss for this study were 6 volunteer endurance-trained runners and 6 volunteer endurance-trained cyclists. They performed discontinuous, graded exercise bicycle tests in both an upright and a leaning (racing) sitting position, in a randomized order. The upright position involved sitting with the hands on the handlebars of a standard Monark ergometer, while in the racing position, the hands were on the dropped portion of turned down, racing style handlebars. A 2 x 2 ANOVA with repeated measures on one factor (position) was used to analyze the data for the dependent variables of submax HR, submax perceived exertion, max work output, and max oxygen uptake. No diffs ($p > .05$) were found between the S groups, nor between the 2 positions for M submax HR and submax perceived exertion scores. The cyclists achieved higher ($p < .05$) max work output scores and higher ($p < .05$) max oxygen uptake values than did the non-cyclists. Higher ($p < .05$) max work output scores and max oxygen uptake values were achieved when the Ss were tested in the upright cycling position than those obtained in the leaning (racing) cycling position.

135. ROBERTS, D. Construction of a knowledge test of baseball strategy. M.S. in Physical Education, 1985, 78 p. (B. Jensen)

The intent of this investigation was to construct a valid and reliable knowledge test of baseball strategy for college

baseball players. The knowledge test consisted of 26 four option multiple-choice items. Ss for the investigation were 60 college varsity baseball players and 60 non-baseball players. Content validity was determined by a panel of 16 baseball experts. Item analysis was used to determine the difficulty rating, index of discrimination and effectiveness of non-functioning foils. The Flanagan method utilizing the Ss who scored in the upper 27% and lower 27% of the total tests was the procedure used for computing the item analysis. Construct validity was established through a divergent groups construct validity process. The M test scores for baseball players and non-baseball players were compared utilizing an independent groups t-ratio analysis. The varsity baseball players scored higher ($p. < .05$) on the knowledge test than non-baseball players. The coefficient alpha was utilized to estimate the internal consistency and unidimensionality of the knowledge test. The alpha reliability for the entire test yielded an acceptable coefficient of .867.

136. ROWLEY, J. RPE as in indirect measure of percent MVV in normal subjects and patients with COPD. M.S. in Physical Education, 1985, 70 p. (E. Burke)

11 Ss with chronic obstructive pulmonary disease (COPD) and 10 normal Ss performed a treadmill stress test. Minute ventilation (V_E), heart rate (HR), and perceived exertion (RPE) were measured at each stage during the test. Max voluntary ventilation (MVV) was measured for each S. A 2 x 3 ANOVA was performed for the 2 levels of S type and 3 levels of RPE (10-11, 12-13, 14-15). The dependent variable was percent MVV (V_E/MVV). At each RPE level COPD Ss were found to elicit a higher ($p < .05$) percent MVV during the test than normal Ss. Percent MVV values associated with the RPE groups 10-11, 12-13, and 14-15 were 17.42 + 4.69, 24.02+ 7.87, and 34.25+9.93 in the normal Ss and 48.24+18.6, 49.98+16.05, and 69.96+19.43 in the COPD Ss, respectively. A sig diff ($p < .05$) was found between the M percent MVV values associated with RPE groupings of 10-11 and 14-15, and RPE groupings 12-13 and 14-15. No sig diff ($p > .05$) was found between the RPE groupings 10-11 and 12-13. Correlation coefficients were calculated for the relationships between HR and RPE, percent MVV and HR, and percent MVV and RPE for each S type. Correlation coefficients of $r = .78$ and $r = .62$ were found between HR and RPE in normal and COPD Ss, respectively. The correlations between percent MVV and HR were $r = .70$ and $r = .28$ in the normal and COPD groups, respectively. The correlations between percent MVV and RPE

were r = .72 and r = .61 in the normal and COPD Ss, respectively. These correlational findings imply that RPE may be a better indicator of percent MVV than HR.

137. SIMEON, M. The effects of prior meal consumption on subsequent physical performance. M.S. in Physical Education, 1985, 57 p. (E. Burke)

Ss for this study were 18 healthy male college students. On separate days, Ss performed a combined steady-state - graded treadmill run, once in a fasting state and once after consuming a 623 calorie, 505 gram meal, one-half hour prior to their run. Exercise energy expenditure, endurance time, and perceived exertion were measured during both conditions. A repeated measures t-test was used to analyze endurance time scores. Energy expenditure and perceived exertion were analyzed with a 2 x 3 repeated measures ANOVA. No sig diffs ($p > .05$) were found between the dependent variables and test conditions.

138. THURSTON, A.E. An analysis of the relationships between selected biomechanical parameters and distance in football punting. D.P.E. in Physical Education, 1984, 173 p. (H. J. Scheuchenzuber)

Ss for this study were 18 male collegiate and free agent football punters. Instructed to punt for max distance, each S was filmed in the sagittal plane at 250 frames per second for 10 trials. Each trial was digitized for total body center of gravity and lower body segmental kinematics and ball kinematics. Specific frames included ball catch, each foot plant, ball drop, final support leg plant, ball contact, ball launch, and max vertical displacement of the kicking leg. A mechanical model was constructed to evaluate the relationships between the dependent variable of distance and 4 independent variables: launch velocity, launch angle, launch height, and the hypothetical-real distance ratio. Correlational and multiple regression analyses were used in the treatment of the data to develop prediction equations. No relationships ($p > .05$) were found between distance and the 4 independent variables. The correlation of .49 between the type of spiral and distance was sig ($p < .05$). The proposed model was revised to show strong correlations ($p < .05$).

139. WENNING, W. A comparison of vertical jump performance at high and low atmospheric pressure levels. M.S. in Physical Education, 1985, 42 p. (M. Theulen)

Ss for this study were 13 male members of a collegiate basketball team. All Ss were administered the vertical jump and reach test 14 times over a 3 wk period. Upon completion of the testing period, the National Weather Service at Bradley International Airport in Windsor, Connecticut provided the test administrator with hourly barometric pressure readings (in millimeters of mercury) for the test days. A test day was classified as a low pressure day when the barometric pressure level reading was below 760 mm Hg at the time of testing. A test day was classified as a high pressure day when the barometric pressure level reading was above 760 mm Hg at the time of testing. Vertical jump score data and atmospheric pressure data were analyzed using a 2 x 5 (ANOVA) with repeated measures on both factors (atmospheric conditions and testing sessions). No diffs ($p<.05$) were found in vertical jump scores at high and low atmospheric pressure levels. No diffs ($p<.05$) were found across the 5 testing days.

140. WOODS, S.C. Physical characteristics of female bodybuilders. M.S. in Movement Science, 1985, 118 p. (E. Burke)

The effect of chronic heavy resistance weight training of female body composition has not been conclusively established by previous research. Nevertheless, female body builders are presently using heavy resistance training as a means to gain skeletal muscle mass. The purpose of this study was to describe the body build and composition of 14 competitive female body builders and to discuss the magnitude and direction of diffs between these women and a control group of 128 healthy untrained females from Wilmore and Behnke (1970). Ht, wt, bone diameters, skinfolds, circumferences, % body fat and lean body weight were measured. The female body builders were 4.3 cm shorter, 5.2 kg lighter, had a smaller skeletal size and also had smaller skinfolds than the controls in every measure. In all muscular areas of the body above the waist (including shoulders, back, biceps, and forearm) the female body builder had larger circumferences than the controls. The female body builders had 11.7% less total body fat and 2.4 kg more lean body weight than the controls. Their lean to fat ratios were 6.9 and 2.9, respectively. 4 major conclusions resulted from this study: female body builders had sig less total body fat

than the controls; female body builders had a diff external body form than the controls based on somatograms and photographs; muscular hypertrophy was evident in female body builders from bone diameter, girth and skinfold measures as well as subjective photographic analysis; predictions of excess muscle from bone diameters suggests the 9.2 kg increase in muscle mass in the female body builders is more substantial than in exp research studies of shorter duration. Any gains in lean body mass as a result of training occurred without the use of anabolic steriods.

141. WOOLSON, D. Competitive ideal self-perceptions and gender classifications of female athletes and nonathletes. M.S. in Physical Education, 1985, 84 p. (M. Murray)

125 women were studied to determine whether there were diffs in ideal self-perception in a competitive setting between athletes and nonathletes and among gender classifications (masculine, feminine, androgynous, and undifferentiated). The Ss were female athletes (n = 59) and nonathletes (n = 66) in their senior year at Springfield College, Springfield, MA. Each of the Ss was administered the Adjective Check List (ACL) for determination of self-perception in a competitive setting and the Bem Sex Role Inventory (BSRI) for gender classification. A 2 x 4 ANOVA with 2 independent factors was used for the analysis of data. One independent variable was female athletes and nonathletes and the other was gender classifications. The dependent variable was the scores on the Ideal Self Scale of the ACL. No sig ($p > .05$) diff was found in ideal self-perception in a competitive setting between female athletes and nonathletes. No sig ($p > .05$) diffs were found in ideal self-perceptions in a competitive setting among gender classifications of female athletes and nonathletes.

STATE UNIVERSITY OF NEW YORK (T. Steele)
CORTLAND, NEW YORK

142. SMALT, R.H. Coping strategies of young female gymnasts in dealing with pre-competitive stress. M.S. in Physical Education, 1985.

The purpose of this study was to identify coping strategies used by young female gymnasts prior to competition, the frequency with which those coping strategies were selected, and the relationship between coping strategies and performance.

Female gymnasts (N=65), ages 9-11 yrs competing in the Eastern Regional YWCA Gymnastics League completed a questionnaire entitled "Pre-Competitive Coping Strategy Questionnaire". Gymnasts indicated the frequency (rarely to often) with which they used each strategy prior to actual competition. Performance scores from the 4 Olympic events (vault, uneven parallel bars, balance beam, and floor exercise) were collected for comparison between high-level and low-level All-Around performers and their choices of coping strategies. The results of this study suggested that there were a variety of coping strategies used by gymnasts in their attempts to manage pre-competitive stress. A principal components factor analysis of the coping strategies revealed 3 interpretable factors: negative/fragmented behaviors, which consisted of coping strategies that appeared to be unrelated to focusing on a successful performance; outward focus/avoidance behaviors, which loaded with strategies of an external nature; and positive/mental preparatory behaviors, which consisted of strategies that may be appropriate for preparing for a successful performance. A 2 tailed t-test showed one sig diff between coping strategies of high-level and low-level performers.

TEMPLE UNIVERSITY (M. Owen)
PHILADELPHIA, PENNSYLVANIA

143. DAVIS, A.M. Measurement of antibody response to influenza virus vaccine in anerobically trained mice. M.Ed. in Physical Education, 1985, 27 p. (Z. Kendrick)

144. DRYSDALE, R. Influence of two doses of Propranolol on rat muscle glycogen levels after one hour of treadmill running. M.Ed. in Physical Education, 1985, 35 p. (Z. Kendrick)

145. FROST, G. The effect of posture on recovery of heart rate after exercise. M.Ed. in Physical Education, 1985, 64 p. (M. Owen)

146. HINK, M.P. Effects of snow shoveling on heart rates and blood pressures of young adults. M.Ed. in Physical Education, 1985, 43 p. (A. Paolone)

147. MARTIN, D.A. Identification of comparison of attentional and perceptual styles and anxiety levels of higher and lower rated male officials of women's basketball. M.Ed. in Physical Education, 1985, p. 72 (C. Oglesby)

148. PACKMAN-BRAUN, R.A. Relationship between FES duty-cycle and fatigue in the hemiparetic wrist. M.Ed. in Physical Education, 67 p. (M. Owen)

149. PITKOW, B.F. Effects of strength training, body limb involvement and load magnitude of perceived heaviness. M.Ed. in Physical Education, 1985, 54 p. (R. Berger)

150. RUBIN, A. Relationship between strength level and fatigue in bench press force curve. M.Ed. in Physical Education, 1986, 54 p. (R. Berger)

151. WALNUT, H. Computers in college and university athletic departments: The case for inclusion of computer courses in graduate sports administration curricula. M. Ed. in Physical Education, 1986, 49 p. (M. Owen)

152. WEIL, R.M. The effects of a prolonged fencing tournament on the accuracy, movement time, and reaction time of the fencing thrust. M.Ed. Physical Education, 1985, 50 p. (R. Berger)

153. YORKO, J. The effect of beta blockade on isokinetic strength performance. M.Ed. Physical Education, 1986, 74 p. (Z. Kendrick)

154. BEY, L.W. Impact of desegregation on selected aspects of the athletic programs on the minority institutions in the Central Inter-collegiate Athletic Association. Ph.D. in Physical Education, 1985, 122 p. (R.D. Bunnell)

155. FORVOUR, J.E. An analysis of compliance with Public Law 94-142, with regard to adapted physical education in public school system of Camden County, New Jersey. Ph.D. in Physical Education, 1984, 115 p. (M. Goldberger)

156. HARRINGTON, N. Visual components of sports performance. Ph.D. in Physical Education, 1985, 115 p. (M. Ridenour)

157. PEARSALL, J.J. The relationship of student athlete perception of leadership styles of the coach to the incidence of team strikes, boycotts, and walkouts in inter-collegiate athletics. Ph.D. in Physical Education, 1978, 177 p. (J. Oxendine)

158. RUMSEY, W. Bioenergetics in the aging 344 rat. Ph.D. in Physical Education, 1985, 144 p. (Z. Kendrick)

159. WANLESS, T.L. A descriptive profile of the administrators and selected administrative practices of the inter-collegiate athletic programs in the National Christian College Athletic Association member institutions. Ph.D. in Physical Education, 1985, 134 p. (I. Shapiro)

160. WHITE, G. A comparison of training programs of varying intensity on the work performance of collegiate oarsmen. Ph.D. in Physical Education, 1986, 110 p. (R. Berger)

161. KAISER, W.J. An analysis of the relationship between selected health conditions, demographic variables, and the type A coronary prone behavior pattern among NCAA Division I.A. and Division II head football coaches. Ed.D. in Physical Education, 1986, 113 p. (M. Jackson)

162. YOUNG, D.S. Mentoring and networking among male and female athletic administrators in Division I & II, NCAA institutions. Ed.D. in Physical Education, 1985, 239 p. (C. Oglesby)

TENNESSEE STATE UNIVERSITY (H. Beamon)
NASHVILLE, TENNESSEE

163. LEE, J.D. A comparison of the GPA's among varsity athletes and non-athletes at Tennessee State University, 1983-84. M.A. in Education, 1985, 60 p. (F. Sawyer)

169 varsity athletes and 169 stratified randomly selected non-athletes were tested to compare academic performance for a 1 yr period. Groups consisted of 72 Fr, 39 So, 34 Jr, 24 Sr. All varsity athletes were used for this study regardless of GPA, race or sex. The 169 non-athletes in this study were selected from the roster of full time undergraduate students. An ANOVA was used to test for sig diff among the M GPA's of all varsity athletes. Scheffe's Multiple Range Test was employed to pin-point any sig diff. A t-test was used to compare the GPA's of athletes and non-athletes at $p < .05$. Findings revealed a sig diff among the scholastic averages of the varsity athletic teams ($F=3.685$). Scheffe's Multiple Range Test

exposed a sig diff between the M GPA of the football team and women's track team. Athletes had a M GPA of (2.21), non-athletes had a M GPA of (2.50), revealing a sig diff in favor of the non-athletes. It was concluded that: sports participation at TSU seemed to have a negative effect on the academic achievement of athletes. Players on the most popular spectator sports and men's basketball teams showed the poorest academic performance among all athletic teams.

UNIVERSITY OF ALABAMA (J. Smith)
TUSCALOOSA, ALABAMA

164. ASHLEY, F.B. The effects of a two-week adventure program on group cohesion in the physically handicapped. Ed.D. in Physical Education, 1986, 82 p. (J.F. Smith)

28 physically handicapped campers (age 15-18) attending a 2-week camp session were selected as Ss to determine the effects of an adventure program on group cohesion. Ss were matched and paired according to sex, age, and disability, and randomly assigned to an adventure group (M=9, F=5) or a control group (M=9, F=5). Individuals in the adventure group participated in a camp program which consisted of adventure activities while the control group went through 2 weeks of the regular camp program. To measure group cohesion, the Fundamental Interpersonal Relations Orientation-Behavior test was administered to all Ss the night of arrival at camp and again at the completion of the session. A comparison of the Ms in the study with established norms showed little diff although female Ss appeared to demonstrate higher scores than the norms in the area of Expressed Affection. MANOVA demonstrated no sig diffs in group cohesion between the 2 groups. There were also no sig changes in group cohesion for either group from pretest to posttest. Within the limitations of the study it was concluded that a 2-week adventure program for the physically handicapped did not have a greater effect on group cohesion than a 2-week traditional camp program.

165. TODD, W.C. Recreational activities: Their relationship to past aggressive behavior and their trends in forensic patients. Ed.D. in HPER, 1984, 112 p. (W.F. Clipson)

89 male forensic patients (17 - 59 years, 49 black and 40 white)

with criminal charges were given the Leisure Activity Blank (LAB) to measure their activity level, and their past violence levels were rated using the Legal Dangerous Scale (LDS) to study the relationship of activities on violence. Using the violence levels and the presence or absence of violence in family backgrounds the Ss were placed into 4 groups: low-violence individuals from nonviolent families; low-violence individuals from violent families; high-violence individuals from non-violent families; and high-violence individuals from violent families. These 4 groups and 2 other groups based on race and mental condition were composed using a 2-way and 1-way ANOVA at .05. Results showed that activity levels between low-violence and high-violence Ss were similar; activity levels of high-violence and low-violence from violent families were similar; activity levels of high-violence individuals and low violence individuals from non-violent families were similar; activity levels for high-violence individuals from non-violent families and high-violence individuals from violent families were similar; violence levels based on race and mental conditions were similar; recreational trends were diff based on race and mental condition; and insufficient evidence was obtained to support either the "cathartic" or the "learned-behavior" theory of violence and activity participation.

UNIVERSITY OF ARKANSAS (G. Moore)
FAYETTEVILLE, ARKANSAS

166. HEFLEY, R.D. Performance of basic motor learning tasks by medicated and non-medicated hyperactive-emotionally handicapped children and normal children. Ed.D. in HPER, 1985, 74 p. (F. Wood)

Three specific child groups were compared on 10 motor learning variables. The groups were: hyperactive emotionally-handicapped using a prescribed stimulant medication, hyperactive emotionally-handicapped not using medication, and normal children. The variables included: visual RT, visual MT, visual response time, auditory RT, auditory MT, auditory response time, hand-eye tracking ability, and manual dexterity skills. The Ss were all males, CA's of 8 to 11, with 15 normal, 15 hyperactive emotionally-handicapped non-medicated, and 9 hyperactive emotionally-handicapped medicated. Intergroup comparisons were computed using ANOVA. No sig diff were found between normal and hyperactive

non-medicated boys on the 10 motor variables with the exception of tracking the triangle pattern on the rotary pursuit. This suggests that as complexity of the task increases, sig diff between the 2 will be observed with normal performing better than non-medicated boys. In general, both normal and non-medicated performed better on motor variables than the medicated.

167. KRAEMER, R.A. The effects of marathon running on blood components and pulmonary function. Ed.D. in HPER, 1985, 77 p. (G. Moore)

The Ss were 23 male and 3 female marathon runners, CA's of 23 to 50, who were tested before and after the 1985 Hogeye Marathon in Fayetteville, AR. Tests for pulmonary function consisted of FVC and FEV_1. Blood samples were analyzed for sodium, potassium, glucose, LDH, creatine, CPK, triglycerides, cholesterol, hematocrit, hemoglobin, protein, white blood cell number, uric acid, carbon dioxide, and iron. All of the blood parameters increased sig in concentration with the exceptions of glucose and carbon dioxide. After accounting for plasma volume loss, there were sig increases in blood serum LDH, creatine, CPK, white blood cell number, uric acid, and iron; and sig decreases in sodium and glucose. There was a sig decrease in FVC. No strong relationships were found between performance time and blood chemistry or pulmonary function.

168. TROGDON, D.A. Mental imagery and the development of pitching accuracy. Ed.D. in HPER, 1985, 100 p. (G. Moore)

The Ss were 46 male volunteer college students divided randomly into 3 groups: physical practice, mental imagery practice, and physical plus mental imagery practice. A pre-test on pitching accuracy was administered followed by 3 wks of prescribed practice routines. Ss threw 60 throws each practice session for a total of 480 throws. A post-test followed the training period. The M gain scores were subjected to dependent t. An ANOVA determined if sig changes had occurred between groups. A 2 by 3 ANOVA with repeated measures was also utilized. Results indicated all 3 groups made sig improvements in pitching accuracy but no group was sig superior to the other groups. This supported earlier research which indicated the use of mental imagery can improve the performance of a physical skill.

169. WILLIAMS, T.K. Smokeless tobacco behaviors among rural high school students in Arkansas. Ed.D. in HPER, 1985, 82 p. (R. Guyton)

The Ss were 1201 rural HS students (595 males and 606 females) attending 14 HS in AR selected on a stratified/random basis. Instruments used were: Revision of Marty-Williams Smokeless Tobacco Health Inventory, The Self Attitude Scale (Rosenberg), and the Health Locus of Control (Rotter). The Mann-Whitney U Test was utilized to compare users and non-users of smokeless tobacco as to athletic performance, aerobic activity, oral hygiene habits, sleeping habits, dental visits, alcohol usage, tobacco usage, and GPA. Independent t was used to compare users and non-users on certain variables. Results were that 220 (18%) used smokeless tobacco (205 of these were male). A parent or relative was identified as the single most important influence that initiated their smokeless tobacco behavior. A sig diff existed between users and non-users regarding knowledge of the adverse effects of smokeless tobacco ($p=.01$), feeling of self-esteem ($p=.01$), and habits of oral hygiene ($p=.01$).

UNIVERSITY OF CALIFORNIA, (R.J. Park)
BERKELEY, CALIFORNIA

170. FUKUSHIMA, S. Bushido in Tokugawa Japan: A reassessment of the warrior ethos. Ph.D. in History and Anthropology, 1984, 288 p. (R.J. Park)

Bushido (the ethos of the professional warrior class) was manifested in the warriors' attempt to redefine their collective identity during the first half of the Tokugawa period (1600-1750), and that exhibited a close association with dominant cultural values. During this period the traditional bases of the warrior class became unsuitable under the newly established political objectives of peace and tranquility throughout the land. The features of Bushido, however did not remain static. Nevertheless, throughout certain fundamental elements persisted: ie, the Japanese household system, and honne/tatemae, the Japanese dual concept of the self in social interaction. Although it was less relevant in peaceful Tokugawa Japan, Bujutsu (martial arts) that also incorporated ie and honne/tatemae, was continuously employed as a means to cultivate warrior ideals. The warriors maintained that Bujutsu refined their daily behavior, and thus their identity. Japan

during the Tokugawa period is an example of a society undergoing crises, as the previously established social order begins to break down. At such times, efforts which are made to reestablish order may place considerable emphasis on monolithic unifying structure and forces. Bushido acted as such a force in Tokugawa Japan.

UNIVERSITY OF FLORIDA (D. Kaufmann)
GAINESVILLE, FLORIDA

171. BUNCHER, R.B. Muscle damage: a possible factor of skeletal muscle fatigue in prolonged exercise. M.S. in Exercise Physiology, 1985, 54 p.

Literature reviews of 2 seemingly unrelated factors, muscle damage and E-C coupling interference, are combined to present an original hypothesis of fatigue occurring during prolonged submaximal work at less than 50% VO_2 max. Whereas ATP energy depletion, causing E-C coupling interference produces normal fatigue in anaerobic white muscle fiber, it is not appropriate to red aerobic fiber. It is suggested that protein debris from damaged Z-lines, normally occurring during eccentric muscular contractions, are hydraulically distributed throughout the muscle. The debris accumulates at the triad junction, mechanically and/or electrically interfering with stimuli conducted through the T-tubules. This increasing E-C coupling disturbance results in decreasing crossbridge cycling (contraction), i.e., fatigue. It is further suggested that the fatigue functions as a safety mechanism to prevent continuous submaximal contractions to the point of critical muscle damage.

172. SCHMIDT, C. J. Running and degenerative joint disease. M.A. in Physical Education, 1985, 38 p (C.B. Stopka)

In recent yrs, there has been an increased interest in running and its effects on the musculoskeletal system. This study was performed to determine if running had any effect on predisposing an individual to degenerative joint disease (DJD). 35 volunteer Ss were divided into running and non-running groups. All Ss were Causasian males, at least 50 yrs of age, and within 10% of their suggested normal body wt. 17 were "runners" who ran a min of 20 miles per wk for the past 5 yrs. 18 "non-runners" were relatively sedentary and did not run on a daily basis. Runners and non-runners were similar in physical characteristics except for exercise. All Ss filled

out a medical questionnaire, had goniometric measurements of lower extremities recorded and x-rays taken of the hips, knees, and ankles. The 2-tailed t-test for independent samples with separate variance was used to determine if any diffs existed between the runners and non-runners. No sig statistical diffs were found at the .05 level of accepted probability. Within the confines of this study, it is presumed that running, per se, does not predispose a middle-aged male to lower extremity DJD.

173. POWELL, M.F. Physiological profiles of female competitive body builders. M.A. in Physical Education, 1985, 45 p. (D.A. Kaufmann)

Physiological profiles were described and a composite profile developed of female competitive body builders (FCBB). 16 females ages 18 to 34 were measured for ht, wt, resting HR, resting BP, flexibility, % body fat by skinfold pinches and by hydrostatic weighing, FVC, FEV_1, MVV and VO_2max. Results indicate that FCBBs tend to be of average ht (M=64.66 in) and wt (M=122.38 lb) and have resting HR and resting BP toward the lower end of the normal range (M=63.25 and 106/63 respectively). FCBBs have sig ($p < .05$) lower % body fat (M=19.2 by pinches and 16.7 by hydrostatic weighing) than normal women (M=27%). CFBBs have good flexibility (M=16.5 cm) and possess sig ($p < .001$) higher than normal lung functions (FVC, M=123% of predicted normal and MVV, M = 151% of predicted normal). Their VO_2max (M=2.093 l/min or 37.68 ml/kg/min) is sig ($p < .05$) better than that of sedentary women (M=32 ml/kg/min), but substantially ($p < .05$) below that of endurance trained athletes (M=50.1 ml/kg/min).

UNIVERSITY OF GEORGIA (J. Schrock)
ATHENS, GEORGIA

174. CARNES, M.M. Movement processes for physical education instruction. Ed.D. in Curriculum, 1985, 191 p. (A.E. Jewett)

An initial list of behavioral characteristics of the 7 movement processes of the Purpose Process Curriculum Framework (PPCF) was mailed to a panel of 32 judges who were asked to agree or disagree that the characteristics appeared to illustrate the movement processes as defined by the PPCF. A criterion of 85% agreement was used to retain a characteristic on the 2nd list. Characteristics receiving less than 85% agreement were either

eliminated from the list or modified as suggested by judges. 15 responses were received from the 1st mailing and were used to develop a 2nd list which was mailed to 30 of the original 32 judges. 13 responses were received. The criterion of 85% agreement was again used to retain a characteristic on the final list intended for use in future staff development. A workshop to familiarize teachers with the movement processes was presented to 4 female physical teachers from a suburban county school system. 2 teachers taught MS and 2 taught ELE school physical education. The teachers used the movement processes in their classes for 3 wks following the workshop. Teachers were interviewed and the interviews transcribed from tape to determine: teachers' goals for their programs; teachers' perceptions of the county program; teachers' perceptions of curriculum guides; a construct of the movement processes as used by the teachers; and suggestions for future workshops. The workshop format was revised based on suggestions made by the teachers. It was concluded that the movement processes are useful in helping teachers understand the ways in which persons learn movement, and that teachers can use the movement processes to plan instructional activities.

175. COLLINS, M.A. Plasma volume, metabolic, and cardiorespiratory responses to various intensities of weight lifting. Ed.D. in Physical Education, 1985, 138 p. (K.J. Cureton)

15 males (18-23 yrs) were studied to determine the relation of exercise intensity to plasma volume (PV), metabolic (MT), and cardiorespiratory (CR) responses during weight lifting (WL). A secondary purpose was to determine the VO_2/HR relationship during WL. Bouts of WL lasting 11.5 min were carried out on separate days at 4 intensities (40, 50, 60, and 70% of 1-RM). WL sessions consisted of 3 circuits of 4 exercises (bench press, bent-arm row, arm curl, and parallel squat) performed for 10 reps each over a 30-sec period with a 1:1 work/rest ratio. MT and CR measures were measured before, during, and following WL. Blood samples were drawn 15 min before, immediately before, immediately after exercise, and 15, 30, and 60 min into recovery. PV decreased linearly in relation to intensity of WL with changes of -7.7, -10.7, -12.1, and -13.9% at 40, 50, 60, and 70% of 1-RM, respectively. All MT and CR variables increased linearly in relation to intensity of WL. VO_2 and HR ranged from 33 - 47% and 63 - 82% of treadmill-determined max, respectively. The regression equation predicting $\%VO_2$ max from %HRmax indicated that as HR

increased, relative metabolic strain (%VO_2max) increased less rapidly than reported for cycling or running. IN conclusion, PV decreases and MT and CR variables increase linearly in relation to intensity of WL, and the VO_2/HR relationship is diff than during dynamic, low-resistance exercise.

176. DOWNING, D.M. Attitude and/or conduct problems in church sports. Ed.D. in Recreation and Leisure Studies, 1985, 139 p. (T.A. Baumgartner)

A total of 122 male Baptist church recreators comprises the sample who responded to a survey constructed to identify problems in church sports. The questionnaire was divided into 6 categories and problems were identified in each section. These problems were submitted to a Response Evaluation Committee for suggested resolvance. Application of the Chi Square Test of Independence revealed no relationship between the demographic traits studied and the manner by which the questions were answered. Proven by the study was the fact that the coach was the source of the most problems in church sports, adults represented the age group with the most problems, and basketball was the sport with the most problems. Major conclusions drawn from the study included the existence of an overemphasis on winning in church sports, a trend toward intramural programming, and an apparent deviation by the recreator from sound, basic administrative procedures designed to prevent the problems identified. Major recommendations included giving careful attention to the selection and training of coaches, establishment of an educational program aimed at adults to inform them of program goals, initiation of an intramural program to aid in the elimination of the "win at all costs" syndrome, and the consistent involvement of the recreator as a participant, spectator, or administrator.

177. NEIKIRK, M.M. Characteristics of reentry women students and their purposes for participating in movement activities. Ed.D., 1985, 105 p. (A.E. Jewett)

136 undergraduate women (25+ years) completed the Reentry Women Students: Physical Education Survey developed by the researcher. The instrument included the Personnel Purposes and Meanings in Movement Inventory (PPMI). Demographic and academic characteristics of the Ss were determined by descriptive statistics and frequency distributions. Ss participated in diff type of movement activities in 1984 than during adolescence; i.e., fitness rather than sport skills.

The PPMMI purposes rated most important were Aliveness, Circulo-respiratory Efficiency, Musculo-skeletal Efficiency, Weight Control, Attractiveness, Catharsis, and Mechanical Efficiency. Chi-square analyses were conducted to determine the relationships between PPMMI purposes and age, reported health status, and reported skill level. No sig relationships were found between PPMMI purposes and age. At the .05 alpha level, there were statistically sig relationships between reported health status and 2 purposes. 15 sig chi-square values were found between reported skill level and purposes. The most common concerns about the basic physical ed program at the University of Georgia were the necessity of a physical ed requirement for reentry students, difficulties of scheduling physical ed courses by reentry women students and the interest in physical ed courses modified appropriately for reentry students.

178. SPEAKMAN, M.A. A crosscultural comparison of purposes for moving. Ed.D. in Physical Education, 1985, 164 p. (A.E. Jewett).

A crosscultural examination of the purposes identified in the Purpose Process Curriculum Framework (PPCF). Using a modified delphi technique 3 rounds of a questionnaire were sent to 20 American, 20 English and 10 Japanese respondents who were both specialists in physical ed curriculum and teacher educators in the field of physical ed. A Paired Comparison t-test was used to analyze the ratings of the purposes from Round I and Round III. No sig diff was found between the ratings from Round I and Round III, for both the present and the future and for each country. A variance coefficient for each purpose, for the present and the future, indicated convergence of opinion which was further supported by a nonparametric Sign Test. A one-way ANOVA was used to compare the ratings of the purposes among countries. There were sig diffs on the ratings of a majority of the purposes. Specific diffs among the countries were detailed using the Tukey technique. The diffs were more noticeable in the ratings for the present than for the future. A Paired Comparison t-test was used to determine the diff between the present and the future ratings of the purposes. The analysis indicated a sig diff which was more pronounced with the English and Japanese respondents than with the American respondents. Respondents did suggest changes in purpose statements which they were then asked to rate in Round III. WHile they generally agreed with the suggested changes, the changes did not affect the rating of the purposes

involved. Additional purposes were suggested which, upon analysis, were considered to have been included in the original purposes. It was concluded that the purposes identified in the Purpose Curriculum Framework are recognized as purposes for moving by respondents in America, England and Japan. Purposes within the key concepts of individual development and social interaction were considered more important purposes for moving than purposes contained within the key concept of environmental coping.

UNIVERSITY OF IDAHO (D. Zakrajsek)
MOSCOW, IDAHO

179. KIM, D.W. A comparison of academic learning time between high-rated and low-rated secondary school physical education teachers. Ph. D. in Sport Pedagogy, 1986, 104 p. (D.B. Zakrajsek)

Initially, 6125 students rated their 100 PE teachers using the Instructional Assessment Inventory (Zakrajsek & Box, 1978) in Seoul, Korea. After rank ordering by M, 25 high- and 25 low-rated teachers were identified for data collection and comparison. The revised 1982 Academic Learning Time-Physical Education instrument (Siendentop, Tousignant, and Parker, 1982) was used for data collection. 10 sig diffs at the .05 level were found utilizing ANOVA. High-rated teachers spent less time for break, less time on warm-up, more time explaining the technique, more time on strategy explanations, and more time on scrimmage activity than low-rated teachers. The students in high-rated teachers' classes spent less time on waiting, less time off-task, more time on cognitive tasks, more time on subject matter motor activity, and less time on subject matter motor activity that was either too easy or too difficult than students in low-rated teachers' classes. The major conclusion was that secondary physical ed teachers who were rated higher by their students provided more academic learning time than teachers rated lower by their students.

UNIVERSITY OF ILLINOIS (M.E. Kneer)
CHICAGO, ILLINOIS

180. PUFAHL, A.E. Influence of Title IX on intramural programs among selected large universities and colleges in the United States. M.S. in Physical Education, 1985, (M.E. Kneer)

A valid and reliable questionnaire was sent to 80, geographically stratified, randomly selected intramural directors of institutions listed in the NIRSA directory, with an undergraduate population of 15,000 or more to investigate the influence Title IX has had on intramural programs of large universities and colleges in the United States. 81% responded. The questionnaire was designed to answer questions on the following topics: Title IX compliance, changes in participation, funding, changes in programs, Title IX athletic influence on intramurals, administrative structure, and comparison of response by gender. Data were treated by computing the percentage of the various responses. A series of chi-squares were run on male and female respondants to determine the diffs of response. Results indicate that a majority of the institutions did not seem to be influenced by Title IX; most failed to meet administrative requirements; female participation has increased but funding had not kept pace with this increase; a majority of the respondents changed their rules to accommodate females; female intramural directors decreased; and time and activities for intramurals decreased 25% as a result of increased use by females.

UNIVERSITY OF ILLINOIS, (J. Loy)
URBANA-CHAMPAIGN, ILLINOIS

181. BUNT, J.C. Sex- and training-related differences in metabolic, sex steroid and growth hormone responses during prolonged exercise. Ph.D. in Physical Education, 1985, 225 p. (R. Boileau)

182. EVANS, J.R. The process of team selection in children's self-directed and adult-directed games. Ph.D. in Physical Education, 1985, 265 p. (G. Roberts)

183. GRABINER, M.D. Skeletal muscle response during the isometric phase of an unrestricted isotonic contraction. Ph.D. in Physical Education, 1985, 182 p. (K. Newell)

184. HANRAHAN, S.J. Athletes, scholarships and intrinsic interest. 1985, 72 p. (G. Roberts)

185. HART, M.A. Effect of a proprioceptive neuromuscular rehabilitation program on the strength of shoulder rotation. M.S. in Physical Education, 1985, 72 p. (G. Roberts)

186. HESKETH, G.L. Agon on the plains: A study of character, social structure and expressive behavior among native American warrior societies, 1800-1850. M.S. in Physical Education, 1985, 518 p. (J. Loy)

187. NESBITT, G. Evaluation of computer systems in campus recreation departments. M.S. in Physical Education 1985, 96p. (D. Matthews)

188. PEMBERTON, C.L. Motivational aspects of exercise adherence. Ph.D. in Physical Education, 1985, 117 p. (G. Roberts)

189. SMITH, G.A. Perceived exertion and kinematic characteristics of cross-country skiers using the marathon skate and double pole with stride techniques. M.S. in Physical Education, 1985, 108 p. (M. Adrian)

190. SOUTHWOOD, J.F. A status study of NCAA division I-A athletic fund raising programs. M.S. in Physical Education, 1985, 200 p. (D. Matthews)

191. SPARROW, W.A. Efficiency and motor skill learning. Ph.D. in Physical Education, 1985, 191 p. (K.M. Newell)

192. STEWART, D.J. Effects of prolonged running on ground reaction force patterns wearing shoes of different midsole durometers. Ph.D. in Physical Education, 1985, 283 p. (M. Adrian)

193. STUART, R.D. Postural control of standing balance. M.S. in Physical Education, 1985, 47 p. (K. Newell)

UNIVERSITY OF IOWA (E. Kirkman)
IOWA CITY, IOWA

194. ALHASSAN, H.A. Physical education and sport programs in Jordanian public schools: Perceptions of physical educators. Ph.D. in Administration, 1985, 171 p. (G.F. Hansen and D.R. Casady)

195. ENGSBERG, J.R. A kinematic and kinetic analysis of the talo-calcaneal joint during the support phase of running. Ph.D. in Biomechanics, 1985, 277 p. (J.G. Andrews)

196. HERZOG, W. Individual muscle force prediction in athletic movements. Ph.D. in Biomechanics, 1985, 278 p. (J.G. Hay)

197. ROGERS, M.W. Coordination of voluntary movement and associated postural adjustments in Parkinson's disease and normal aging. Ph.D. in Physical Therapy, 1985, 164 p. (G.L. Soderberg)

198. STEFFEN, J.P. A comparison between computer assisted instruction and traditional instruction in teaching bowling. Ph.D. in Administration, 1985, 126 p. (G.F. Hansen and D.R. Casady)

UNIVERSITY OF KANSAS (L. Mawson)
LAWRENCE, KANSAS

199. BOYD, M.L. Athletic fund raising procedures in NCAA Division I institutions. M.S. in Education, 1985, 290 p. (L.M. Mawson)

Fund raising procedures used by NCAA Division I institutions for funding of revenue sports was sought from athletic directors at the 136 institutions which offer football and basketball programs. The Athletic Fund-Raising Questionnaire (AFRQ) was developed to gather descriptive information on a 15 item self-report scale which included 3 demographic questions, 9 questions related to athletic funding management, and 3 questions concerning priorities in fund raising procedures. It was concluded that in more than half of the Division I institutions, the major fund raising techniques used were booster clubs, direct mail marketing, and team concept donations. The advertising techniques used for fund raising were brochures, promotional letters, flyers, schedules, radio advertising, and newspaper advertising. Donors preferred to designate a sport or a general scholarship fund for both men and women athletes. In 2/3 of the institutions, there were 1 or more full-time fund raising positions. 70% of the institutions generated up to 1/5 of their budget from fund raising efforts, and 20% gained nearly 1/3 of their budget from fund raising. Sport revenues from football and basketball, television, concessions, promoional broadcasting, and facilities were determined as other notable sources of income.

200. DUNAVANT, N. Psychological needs and performance achievement interests of high school and college women athletes. M.S. in Education, 1985, 150 p. (L.M. Mawson)

Silva (1981) conducted a nation-wide study of HS and college coaches, asking them to list psychological problems of their athletes in order of importance and to indicate the frequency in which the problems of psychological origin occurred. 12 psychological needs and 13 performance interests were identified. Using these 25 psychological concepts, the present study was designed to determine the psychological needs and performance achievement interest areas of female athletes as perceived by their head coaches. In addition, the study sought to determine if there were any sig diffs in the perceptions of the head coaches when grouped according to sex, sport coached or level coached. 33 HS head coaches of girls' teams from the Kansas State High School Sunflower Conference and 29 head coaches of women's teams from the NCAA Big 8 Conference indicated their perceptions of each of the 25 psychological concept variables on a 5-point Likert scale. 3 sets of 25 ANOVAs were computed at the .05 level. This study disclosed that the perceptions of some of the psychological needs and interests of female athletes diff between coaches when grouped according to sex, level coached or type of sport coached. Results of the study indicated that perceptions were diff for more needs and interests variables when comparing coaches by sex, than when comparing perceptions of coaches by participation level or by type of sport coached; therefore, it may be concluded that although the level and sport coached may generate some diff perceptions of female athletes' needs and interests, the sex of the coach is more predominate in perceptual diffs.

201. FARO, A. Differences between a skilled and an unskilled performance of the arm thrust phase of the front handspring. M.S. in Education, 1985, 125 p. (C.J. Zebas)

6 female gymnasts divided into skilled and unskilled groups, served as Ss for a comparison of the arm thrust phase of a front handspring. A cinematographical analysis, together with a force platform measurement of the arm thrust force, were used to investigate the handspring executions. The findings showed sig diffs ($p < .05$) for the arm peak forces in both the vertical and horizontal components, the center of gravity trajectory, the hand contact and flight times, the angular velocity of the left foot at take-off, and the horizontal velocity of the

hands. The skilled group displayed higher values in all the variables except for the hands contact time and the horizontal velocity of the hands. The skilled group displayed higher values in all the variables except for the hands contact time and the horizontal velocity of the hands where the unskilled group showed higher values. A statistically sig correlation ($p < .05$) was found between the angular velocity of the take-off foot and the center of gravity rise during flight.

202. KREAMER, K.A. A study of the impact of women's movements on the emergence of women's athletics and sports in the United States. M.S. in Education, 1985, 118 p. (L.M. Mawson)

The relevancy of the women's movements throughout United States history to the emergence of women's athletics and sports in the United States, was investigated in a historical study. It was concluded that the women's movements throughout history did have an impact on the emergence of women's sports and athletics across all historical eras. In each era, women's sports reflected society's changes as a microcosm of women's movements. The abolitionist women, who felt enslaved by masculine social oppression, influenced women's sports by engaging in activities previously considered taboo. The suffragist woman, who sought equality with men through the right to vote, emulated men in sport participation. The working woman of the depression and war years recognized her potential for independence and success, but was scandalized by society when her sporting successes were publicized. Women's sports reflected the career women of the affluent era, as individual sports for the wealthy were considered socially accepted, while team activities for the masses were considered unfeminine. The radical woman spoke out against the social oppressions against her, and she rebelled against restrictions for women in sport. Women's sport seemed to follow the avenues opened by the women's movement rather than serving as a platform for the women's movements.

203. ORLOFF, H.A. A cinematographical analysis and comparison of the float volleyball serve and the power volleyball serve of intercollegiate women. M.S. in Education, 1985, 78 p. (C.J. Zebas)

8 skilled collegiate women volleyball players performing the float and power volleyball serve were cinematographically analyzed and compared. 1 float serve and 1 power serve for

each S was digitized, computerized, and then statistically analyzed. The t-test for small independent samples was used to determine if there were any sig diffs at the .10 level, between the means of variable characteristics of the 2 serves. The conclusions drawn from this study were as follows: arm velocity was increased from the float to the power serve; there were no diffs in stride length, vertical deviations of the center of gravity, and angle of inclination of the serving arm or trunk; the contact time of the serving hand on the ball was longer in the float serve than in the power serve; and there was a follow-through in both serves.

204. SARDINAH, L.B. The effect of perceived fatigue on volleyball spike performance. M.S. in Education, 1985, 171 p. (C.J. Zebas)

In order to investigate the effects of perceived fatigue on volleyball spike skill performance, 5 female intercollegiate volleyball players performed a set of 3 good spikes in the conditions of non-fatigue (NF) and perceived fatigue (PF). The fatigue conditions were assessed with the Borg 15-point category scale. The spikes performed in the NF and PF conditions were filmed with the LOCAM high speed camera set at 100fps for later computer-aided analysis. In the PF condition, the contact hand angular velocity at ball contact and the height of ball contact decreased sig ($p < .05$). It was concluded that spike performance deterioration in the PF condition may have been due to any of the following: a decrease in the amplitude of movements during the suspension phase; an inaccurate positioning and timing at ball contact; a smaller contribution of the non-contact upper and lower arms to lift the body; a greater angular displacement during which the kinetic energy is absorbed to decelerate the body COG in the support phase; or, a delay of the left and right shanks to initiate the propulsive sub-phase of the support phase.

UNIVERSITY OF KENTUCKY (S. Hunt)
LEXINGTON, KENTUCKY

205. ARGO, E. The impact of a specialized training program on the cooperative development of outdoor education programs for special education students in selected schools in Kentucky. 1985, 69 p. (D. Vinton)

The purpose of this study was to determine the impact of a

specialized training program on the cooperative development of outdoor ed programs for special ed students in selected schools in Kentucky. The training program was conducted by the Outdoor Education for the Handicapped Project at the University of Kentucky through a series of workshops. A survey instrument was developed for the purpose of this study and was mailed to 119 teachers involved in the training. A total of 83 surveys (69.7%) were completed and returned. Results indicated a 24.5% increase in the development of outdoor education programs on a regular basis and a 31.7% increase on an occasional basis. The extent of parent involvement increased by 13.2% on a regular basis and by 18.4% on an occasional basis while the extent of community resource personnel involvement increased by 12.9% on a regular basis and 15.5% on an occasional basis.

206. CONNELLY, R.E. Infrared thermometry: A normative study and an investigation of the association between skin temperature changes and pain. 1985, 91 p. (D. Currier).

This study was to investigate the validity and reliability of thermometry and the association between skin temperature (Tsk) changes and back pain. The study has two parts, the normative study and patient study. The normative study involved 30 Ss who had their Tsk taken on 4 days over a 4-wk period at 18 sites using the Mikron 80 Series Portable Digital Infrared Thermometer (Mikron) and Yellow Springs Instrument Model 47TA Telethermometer (telethermometer). An ANOVA was performed for each of the 2 sites at 9 levels along the spine. The results indicated that the telethermometer has a greater reproducibility and less inherent variability of measurements than the Mikron. The diff in instruments could partially be explained by the diff precision and the variation in what each instrument measures. The patient study included 58 patients with back pain. The Tsk of the patients were taken at the 18 sights using the Mikron prior to each treatment. Paired t-tests were used to analyze the data. The pain sites were not sig diff from the sites without pain. This investigation did not support the use of the Mikron as an objective clinical tool to assess the Tsk changes associated with pain or that Tsk changes do occur with pain.

207. JOHNSON, B.F. The development and validation of a three-dimensional computer technique for analyzing human motion: Application to an overhand fastball pitch. Ed.D. in Biomechanics, 1985, 146 p. (R.V. Mann and J.T. Kearney)

A 14-segment, 3D mathematical model of the human body was developed and validated for analyzing complex, total body human movements. The FORTRAN computer model was incorporated into an existing comprehensive 2D computer analysis technique which was modified to generate 3D results. Upon validation, the computer technique's applicability was demonstrated by an analysis of an overhand fastball pitch. The Direct Linear Transformation cinematographic technique was used to reduce the variables of interest from film records taken of a single pitch thrown by a 19 yr old junior college pitcher. The results of the pitching analysis indicated that the computer analysis technique produced results which were very similar to those reported in the literature, thereby, demonstrating its applicability. The conclusions of the pitching analysis for this S were: the pitching motion was a series of sequentially applied segmental velocities beginning with the lower trunk and transferring segmentally to the hand at release; the legs were not as critical to producing ball velocity at release as were the trunk and upper arm polar axis rotational velocities, the upper arm horizontal flexion velocity and the lower arm extension velocity; and the extreme positions and accelerations of the upper arm and lower arm around release may explain the high incidence of shoulder and elbow injury reported in the literature.

208. KUFFLER, K.E. A survey of factors affecting parental involvement in the Kentucky Special Olympics. 1985, 127 p. (J.W. Hall)

The purpose of this study was to: determine the degree of parental involvement in the Kentucky Special Olympics, identify factors which affect parental involvement in the Kentucky Special Olympics, and identify parental perceptions of the value of Special Olympics. The Ss included 131 randomly selected parents of athletes currently participating in the Kentucky Special Olympics, representing 12 of the 15 areas in the state, and 11 of the 27 area coordinators representing 10 areas. 2 questionnaires were designed for use in this study; 1 was administered by telephone to the parents and the other was mailed to the area coordinators. The results indicated that 50% of the Ss parents had not attended any local events in the last 2 years. Parental involvement in the Kentucky Special Olympics was found to be directly related to income, ed level, number of years the athlete had participated in the program, and participation in other activities. The parents, regardless of their involvement, perceived that the following factors

would increase their involvement: more information about local and state events, transportation for athletes and families, more community sponsorship, more publicity, better communication among parents, better organized events, more local athletic activities, and more social/recreational activities.

209. MOYER, J.E. Identification of competencies needed to plan and implement outdoor education programs for handicapped children. 1985, 117 p. (D. Vinton)

The identification of competencies needed by ed personnel, parks and resource management personnel and parents and/or guardians of handicapped children to plan and implement outdoor ed programs which include handicapped children was investigated by this study. The Nominal Group Technique (NGT) was utilized to identify the critical competencies for each of the 3 facilitator groups. The competencies identified by the NGT were formulated into a questionnaire which was evaluated by school personnel involved in outdoor ed, parks and resource management personnel who have facilities available for outdoor ed and parents of handicapped children. The competencies formulated by reviewing the responses of the NGT and S population represents a specific listing of competencies needed by each of the 3 facilitator groups.

210. SOO, C.L. Multi-comparisons of electrical stimulators. M.S. in Health, Physical Education and Recreation, 1985, 70 p. (D.P Currier)

Several testing procedures were conducted to evaluate the basic functional ability of 4 electrical stimulators (Intellect VMS, Electrostim 180-2, Omni Stim, and HBGS Sentry Mark IV) and the physiological effects of these 4 electrical stimulators imposed on human Ss. 20 subjects participated in this study on a voluntary basis. The right quadriceps femoris muscle of Ss was used to conduct the testing procedures. The MVC of the right quadriceps femoris muscle was determined by the Cybes II dynamometer. The current intensity required to produce 40, 50, and 60% MVC was transformed based on the oscilloscope. Blood velocity augment during post stimulation period was measured by the Doppler Unit. McGill pain questionnaire was employed to determine the subjective pain response to electrical stimulation. The fatigue characteristics of muscle elicited by electrical stimulation at different ratios was detected by the total contraction time. Several ANOVAs and descriptive statistics were employed for statistical analysis. The results

revealed that the Ss could tolerate the stimulation better to achieve 50 and 60% MVC in the Intellect and Electrostim than in the Omni and HVGS; the most efficient stimulator was the Omni, and the least efficient was the Electrostim; pain response of the Ss to electrical stimulation was similar among 4 stimulators; the 4 stimulators affect the blood velocity similarly; the Intellect and Omni caused less fatigue than Electrostim at 40% MVC; and the longer the resting time, the less the fatigue developed.

211. TSAO, C.Y. Analgesic effects of high- and low-frequency transcutaneous nerve stimulation in healthy subjects. 1985, 66 p. (D. Currier)

A crossover experimental design was conducted on 35 healthy young Ss to study diffs between Hi-TENS (100 Hz) and Lo-TENS (2 Hz), applied over the skin area related (in Local group) or the area unrelated (in Central group) to the painful stimulation. Repeated measurements of pain threshold by electrical shock were taken on the left little fingers. Ss received 2 periods of TENS treatments, each period consisting of 10 sessions of 20-minute TENS. The ANOVA showed sig interactions of frequency, sex, and time for both Central and Local groups in Period 1, but not in Period 2; the main effect by time was sig in both groups and periods. Results also showed a sig carry-over effect in the males of the Central group. In conclusion, the treatment protocols of Hi-TENS with local electrode placement and Lo-TENS with central electrode placement were effective for males to increase pain threshold in this study. However this study failed to reveal any sig effectiveness and diffs of Hi- and Lo-TENS, applied centrally or locally in females. The sexual diff in the response to TENS in this study is discussed.

212. ZACHMEYER, R.F. The effect of specialized training workshop in the attitudes on special educators toward disabled persons. M.S. in Health, Physical Education and Recreation, 1985, 58 p. (D. Vinton)

A study of 35 Kentucky special educators in attendance at 1 or 2 workshops conducted by the University of Kentucky Outdoor Education for the Handicapped Project was undertaken to determine the effects of a specialized training workshop on the attitudes of special educators toward disabled persons. The ATDP scale Form O was administered on a pre-test and post-test basis to the sample group. The statistical analysis of the

data involved the comparison of pre-test and post-test Ms to determine statistical sig using the t-test for correlated Ms. A t value of +1.21 was found to exist. A diff of + 2.03 was needed to show statistical sig at the .05 level ($\overline{N}$=35). As a result, the null hypothesis that a specialized training program had no sig effect on the attitudes of a selected group of special educators toward disabled persons was accepted.

UNIVERSITY OF MASSACHUSETTS (P. Freedson)
AMHERST, MASSACHUSETTS

213. McCORMICK, K.M. Menstrual cycle phase effects on serum creatine kinase activity, serum myoglobin concentration and delayed onset muscle soreness. M.S. in Exercise Science, 1985, 154 p. (P.M. Clarkson, W.C. Byrnes)

Menstrual phase effects on post exercise serum creatine kinase activity (SCK), myoglobin concentration (SMb) and ratings of perceived soreness (RPF) were examined in college women. 28 Ss completed a questionnaire claiming regular cycles. Subsequently, 10 Ss were eliminated for cycle irregularities revealed by a 3 mo menstrual cycle log or absence of ovulation as indicated by a serum progesterone measurement. 10 of the remaining Ss exercised in the follicular (FLLR) phase and 8 in the luteal (LTL) phase. Ss performed 40 max isometric knee extensions using a work to rest ratio of 10 to 20 s. Blood samples and RPS were obtained prior to and after exercise at 5 min, 1, 6, 18, 24, 48, 72 and 96 hrs. M relative increased in SCK were 72% and 118% for the FLLR and LTL groups, respectively. Max RPS was 2.9 in both groups. All variables returned to baseline values by 24 hrs. No sig diff in the rate of rise over sample times were observed between groups for any variable except SMb. Although the time to reach peak SMb was similar between the groups, the FLLR group demonstrated a more rapid return to baseline. Thus, menstrual cycle phase may affect the rate of SMb response. However, post exercise SCK and RPS are not influenced by menstrual phase when menstrual status is carefully determined.

214. MOULSON-LITCHFIELD, M.C. Consequences of a sixteen week aerobic and weight training regimen on firefighter fitness. M.S. in Exercise Science, 1986, 199 p. (P. Freedson)

The present study quantified the effects of a 16 wk fitness program on physical performance and body composition

measurements in firefighters (FF). 15 male FF (X age = 33.8 yrs.) volunteered to participate in a 4 month aerobic and weight training program. The Control Group (CG) consisted of 9 male FF (X age = 34.2 yrs.). All Ss were evaluated before and after 16 weeks of training using an Astrand-Rhyming graded bicycle test, vertical jump, situps, pushups, hand grip, lung function evaluation, flexibility and body composition (hydrostatic weighing) analysis. Exercise HR and systolic BP decreased similarly in the EG and CG; 14 EG FF improved at least 1 exercise state post-test. The CG did not change similarly. Results indicated a 16% increase in EG situps (36 to 41), and a sig improvement of 34.5% (29 to 38) for EG pushups. The EG lean body weight (LBW) sig increased (1 kg) with no sig CG change. Attendance of 1.8 times per wk of weight training and 2.6 times per wk of aerobic exercise, elicited sig improvements in EG pushup performance and EG LBW. More frequent attendance of exercise sessions may have elicited greater improvement in other variables.

215. MROZ, M.C. The effects of exercise intensity, VO_2 max and body composition on plasma volume shifts in women. M.S. in Exercise Science, 1985, 109 p. (P. Freedson)

27 females (M age = 24 yrs; M VO_2 max = 45.2 $ml*kg^{-1}*min^{-1}$) performed two 15 minute constant load cycle tests at intensities corresponding to 35% and 85% of VO_2 max (M steady rate VO_2 = 15.2 and 38.2 $ml*kg^{-1}*min^{-1}$, respectively). Venous blood samples were taken pre-exercise (PRE), and immediately after (POST), 15 minutes after (POST15) and 30 minutes after (POST30) exercise to determine hemoglobin (Hb) concentration and hematrocrit (Hct). Percent change in plasma volume consequent to exercise, with PRE value as base line, was calculated using the formula:

$$\%\Delta PV = 100[(Hb_B/Hb_A)*(1-Hct_A*10^{-2})/(1-Hct_B*10^{-2})] -100$$

Maximum plasma volume efflux values were recorded at POST independent of exercise intensity (-3.7% and -11.7% after 35% and 85%, respectively). POST value at 85% was sig greater ($p < .05$) compared to the 35% intensity and PRE, POST15 and POST30 at 85%. Neither VO_2 max ($ml*kg^{-1}*min^{-1}$), nor body composition, defined as percent body fat, had a sig effect ($p < .05$) on the magnitude or time course of plasma volume shifts. The results demonstrate that plasma volume shifts in women are quantitatively similar to those of men. In addition, the data indicate that there is a relationship between exercise intensity and the magnitude of plasma efflux. These findings suggest a methological consideration. In studies which examine

changes in blood substrate concentration at various exercise intensities it may be important to assess and adjust for the influence of plasma volume shift.

216. PECCI, S.P. Human movement during three phases of baseball batting. M.S. in Exercise Science, 1986, 54 p. (B. Ricci)

4 college varsity baseball players were filmed hitting baseballs off a batting tee, against a pitching machine, and against two forms of "live pitching". Spatial and temporal measurements were taken of the hitters' mechanics during this activity. The swing was analyzed in 3 phases: decision, stride, and swing. Each phase was represented in seconds, as a percentage of the ball's flight time, and as the total distance the ball traveled during that phase. In describing the phases of hitting, the 3 representations may be interchanged except when representing the decision phase. Stride length and stride time related sig ($p < .05$) during the pitching machine situation only. Decision and swing phases related sig during all but the batting tee situation. The hitting mechanics became more variable during the more difficult hitting situations, and pitch speeds were least variable during the easier situations. Hitting success declined as the hitting task became more difficult. Based on the results of this study, it was concluded that each hitting situation was important for improving certain aspects of the hitters' techniques. The batting tee situation allowed the hitter to practice spatial orientations, while the pitching machine situation was more useful for working on temporal orientations. The 2 situations involving "live pitching" required the hitters to coordinate both space and time under more progressively varied conditions.

217. SMITH, S.B. Onset of metabolic acidosis (anaerobic threshold) as a criterion measure of submaximum fitness in cardiac rehabilitation patients. M.S. in Exercise Science, 1986, 100 p. (P. Freedson)

The present study evaluated the feasibility of using a 2mM lactate threshold (LT) as a method for defining training intensities for cardiac (CAD) patients. 18 male CAD patients (36-67 years, 6-18 months post MI) underwent 2 trials of a symptom-limited, treadmill walking VO_2 max test (3 min/stage, 0.8 METS/stage). Respiratory gas exchange values and arterialized venous blood samples were obtained at the end of

each stage to determine V_E and lactate concentrations, respectively. 8 of the 18 patients exibited both LT and ventilatory threshold (VT) phenomena. No sig diffs were present between trials for LT and VT determinations ($p > .05$) and correlations were r=0.88 and r=0.95, respectively. A strong correlation existed between the estimates of LT and VT (r=0.83). VO_2s at LT were similar between trials (M=22.1 ml/kg/min, $p > .05$), representing 74.5% FVO_2max. At 60, 70, and 80% FmacHR, 0, 13 and 38% of the patients, respectively, were working above LT. Results demonstrated that in CAD patients; where LT and VT were detected, they could be reliably measured; LT and VT were highly correlated, suggesting VT may be a viable alternative to invasive estimates; and LT did not occur at the same %FmaxHR in all patients, supporting the theory that at the same level of cardiac overload (%FmaxHR), CAD patients are not equally stressed metabolically.

218. TORGAN, C.E. The effects of static stretching on exercise induced changes associated with muscle soreness. M.S. in Exercise Science, 1985, 111 p. (P.M. Clarkson, W.C. Byrnes)

This study monitored various parameters during delayed muscle soreness (DMS) in order to quantify some of the symptoms and to determine if motor performance was impaired during DMS. Additionally, the ability of static stretch to mitigate DMS was examined. Volunteer Ss were 24 females (M=20.5 yrs) who were randomly assigned to 1 of 3 treatments: control, placebo (application of a spurious "superficial stimulation"), or stretch (10 min of intermittent static stretching). All Ss performed an eccentric exercise regimen to the non-dominant hamstring muscle group. Measures of resting and submaximal EMG activity, postural tremor, range of motion (ROM), and perceived soreness, in addition to blood sampling for creatine kinase (CK) activity were taken prior to exercise (ex), at 26 hrs post ex, immediately after the application of a treatment, and 2 hrs after the application. Treatments were administered at 27 hrs post ex. Diffs between baseline and 26 hrs post ex were analyzed with a paired t-test. Pearson r's were calculated on these diffs. Changes over trials throughout the course of the treatments were assessed with a repeated measures ANOVA, covarying on the baseline when appropriate. Results revealed no change in EMG activity; a highly sig increase in tremor amplitude (7.5mV), soreness and CK activity (53mU/ml), and decrease in ROM (30mm), 26 hrs after the exercise ($p < .01$). As soreness increased, ROM decreased ($r = -.58$, $p < .01$). The

treatment of static stretch was effective in restoring ROM ($p < .05$) and caused a marked (although not statistically sig) decrease in perceived soreness. The placebo and control groups had no effect on any of the parameters. It was concluded that the DMS incurred by the Ss in this study was the result of tissue damage (as evidenced by increased CK) as opposed to muscle spasm (as indicated by no change EMG). The increase in tremor amplitude indicated that motor performance during DMS could be impaired. Lastly, a static stretching regimen was found to be temporarily effective in restoring the decreased flexibility as well as alleviating some of the soreness.

219. TRIFFLETTI, P. The effect of repeated local isometric exercise bouts on serum creatine kinase activity and muscle soreness. M.S. in Exercise Science, 1986, 100 p. (P.M. Clarkson)

18 college men were placed into 3 groups to assess serum creatine kinase (SCK) activity and ratings of perceived soreness (RPS) following repeated knee extension isometric exercise. After the initial exercise bout, the same exercise was repeated by Group A (n=6) 7 days later; by Group B (n=6) 14 days later; and Group C (n=6) 21 days later. Group A also repeated the bouts at 14 and 21 days after the initial session. For each session, blood samples and RPS were taken pre-exercise and 6, 18, and 24 hr post-exercise. The regimen consisted of 40 serial isometric contractions of 10 sec duration with 20 sec of intervening rest. The absolute increase in SCK for bouts 1 and 2 were 537 U/L and 189 U/L for Group A, 123 U/L and 54 U/L for Group B, and 144 U/L and 80 U/L for Group C. Bouts 1 and 2 were sig diff for all groups ($p < .05$). Also, RPS were sig higher for bout 1 compared with bout 2. For Group A, exercise bouts 3 and 4 resulted in no further reduction in SCK and RPS. Thus, the performance of a single knee extension isometric exercise bout sig reduces the SCK and RPS response on a repeated exercise bout given up to 3 wk later with no further reduction in subsequent bouts.

220. WHITE, J.S. Blood lactate and integrated EMG of cyclists, runners and untrained subjects during incremental and constant load work. M.S. in Exercise Science, 1986, 151 p. (W.C. Byrnes)

Blood (La) breakpoint ([La]bp) and EMG breakpoint (mxEMGbp) were determined for 3 groups of 7 Ss; untrained, trained cyclists and trained runners based of results on an incremental

test on a cycle ergometer. A non-fatigued EMG breakpoint (nfEMGbp) was also determined for each S. Ss performed 3 constant load tests on the ergometer; below, at and above [La] bp.EMG levels were recorded during max and submax isometric leg extensions. There was no diff between M [La]bp and M mxEMGbp for any group. Cyclists and runners had higher M [La]bp and mxEMGbp than untrained Ss ($p < .05$). Untrained Ss showed higher M EMG level at mxEMGbp than at the same workload in the non-fatiguing test. Untrained Ss displayed greater increases in [La] and EMG than trained Ss in the above-bp bout. These results indicate that: mxEMGbp coincides with [La]bp; the physiological events occurring at [La]bp are not the same across groups in diff states of training, and [La]bp is not solely a measure of lactate production; workloads above [La]bp cannot be normalized across groups in diff states of training using VO_2 max, [La]bp or max isometric contraction.

UNIVERSITY OF MISSOURI (J. Roberts)
COLUMBIA, MISSOURI

221. FAY, L. Physiological parameters related to distance running performance in female athletes. M.A. in Physical Education, 1984, 125 p. (B.R. Londeree)

The study investigated the relationships between running pace and time for the 5 km, 10km, and 10 mi distances and the following variables: HR, VO_2 and treadmill speed at aerobic (AerT) and anaerobic (AnT) thresholds: VO (running economy) and HR at 3 submax standardized treadmill speeds (196, 215, 241 m/min); and max VO_2. Derived variables were relative AerT, relative AnT, relative HR and relative VO_2 at the 3 submax treadmill speeds. 14 moderately to highly conditioned female runners between 18 and 33 participated as volunteers. A series of 10 min steady state treadmill runs were administered to determine AerT (venous lactate = 2.0 mM/L), AnT (venous lactate = 4.0 mM/L) and running economy. Max VO_2 was determined using the Astrand-Rodahl protocol. Ss performed the 5 km, 10 km, and 10 mi time trials on an outdoor 5 km course under competitive conditions. Results showed running economy was not a consistently sig determinant of performance pace in homogeneous subsets of female runners. Stepwise multiple regression analyses were conducted with race pace as the dependent variable and a 2-variable equation was developed for each race pace, with Rs exceeding 0.970. It was concluded that race paces can be predicted accurately from laboratory data for adult women.

222. RAHMATPANAH, M. The effects of verbal and verbal-visual instructional information feedback upon the gross motor skill acquisition of mentally retarded individuals. Ph.D. in Physical Education, 1985, 167 p. (J.A. Roberts)

Literature review revealed that research had not been conducted employing instructional information feedback (IIF) to improve motor skills of mentally retarded individuals. Ss for the study were 38 mildly and moderately mentally retarded persons ranging from 15 to 35 in CA, and divided into 3 groups: a control group, a verbal IIF group, and a verbal-visual IIF group. 2 motor tasks were employed--a kicking task and a throwing task. In pre and post-testing Ss performed 20 trials on each task. During 10 days of instruction the verbal group and the verbal-visual group received IIF at the end of 20 practice trials at each motor task. Ss in the verbal group received individual verbal IIF and the Ss in the combination verbal-visual group received individual IIF while viewing their performance on a TV monitor. All treatment groups improved sig more than the control group on both tasks. The verbal-visual group improved sig more than the control group only on the kicking task. There was no sig diff between the exp groups on the throwing task but gains of the verbal group were sig greater than gains on the verbal-visual group on the kicking task. It was concluded that verbal IIF is a more appropriate method for developing gross motor skills of mentally retarded individuals than combination verbal-visual IIF.

223. SINATRA-OSTLUND, C. A study of predictors of alumni donors and non-donors to intercollegiate athletics at the University of Missouri. Ph.D. in Physical Education, 1984, 104 p. (J.D. Brown)

24 demographic variables were studied to determine ability to predict donor status regarding intercollegiate athletics at the University of Missouri-Columbia. Questionnaires were sent to 500 alumni donors to the Mizzou Athletic Scholarship Associates and to 500 alumni non-donors. Total return rate was 70.2%, with 83% of the donors returning and 57% of the non-donors returning. 18 variables were regressed on donor status using a Logist stepwise regression procedure. 9 variables contributed to an R square of .35. They were, in order of largest contribution to the model: purchasing a season ticket to basketball or football as a student, graduating more than 2 years ago, living in Missouri, having a part-time job associated with UMC athletics as a student, following UMC

athletics prior to entrance as a student, being male, student government involvement, number of degrees earned and having family members planning to attend or now attending UMC. X^2 analysis provided evidence that there are sig diffs between alumni donors and non-donors in regard to marital status, school attended within the University, profession, season athletic ticket holder as an undergraduate and season ticket purchase as a graduate student. It was concluded that there are tangible demographic diffs between alumni who donate to their alma mater's athletic dept and those who choose not to donate.

224. THYE, L.D. The effects of extrinsic interference induced during, and variability of the post-KR interval on motor learning. Ed.D. in Physical Education, 1985, 150 p. (J.A. Roberts)

120 volunteers from university racquetball classes were randomly assigned to 1 of 4 groups, each of which experienced diff treatments involving the post-KR interval on 30 acquisition trials of a simple, novel motor task performed on a microcomputer. Group A had a fixed, 5-sec, open post-KR interval; Group B had a variable 1 to 10-sec open interval following KR; Group C experienced interference in the form of a typing task for a fixed period of 5 sec following the presentation of KR; and Group D performed the typing task for a variable interval of 1 to 10-sec following KR. Both 10 min after and 2 wks following the acquisition trials, Ss performed 15 retention trials with KR provided only as a summary statement at the end of the trials. The results indicated that Group D performed sig worse than the other 3 groups on the acquisition trials. These dissimilarities had disappeared just 10 min later on the short-term retention test since no sig diffs were found on any of the group comparisons. Long-term retention analysis yielded similar non-sig results. However, the comparison of Group A with Groups B and D both approached sig in the predicted direction, indicating a possible reversal in performance may have been developing.

225. VERMILLION, J.D. The effects of attributional manipulations and failure on performance, attributions, cognitive interference and effective responses of high-worry college students. Ph.D. in Physical Education, 1984, 171 p. (J.A. Roberts)

The experiment addressed the question of whether the

performance of high-in-worry college students who had failed (by experimental design) an achievement test was mediated by task-interferring thoughts or by shame from attributing failure to low ability. 55 Ss who scored high on the TAI--Worry Subscale were assigned randomly to a control condition or to 1 of 2 attributional manipulation conditions: impossible task or lack-of-ability. Following a series of 4 experiment-induced failures at a digit-symbol coding task, Ss rated perceptions of task success/failure and completed self-report measures on attributions, task-irrelevant thoughts, and affective reactions. In all, there were 6 conditions, comprising a 3 by 2 factorial design. The results did not support either attribution-affect or cognitive interference as mediators of performance. Although ANOVA indicated that the instructional manipulations had sig effects on performance rs between test performance and ratings of low ability, cognitive interference, and shame were not sig. The major diffs between the attributional manipulation groups occurred on ratings of affect. The impossible-task group reported more positive and less negative affect. The lack-ability group reported less positive and more negative affect. In all probability the cognitive, motivational, affective, and behavioral processes of high-in-worry students in achievement/evaluative situations cannot be explained with a unidimensional mediating variable.

UNIVERSITY OF NORTH CAROLINA (F. Pleasants)
CHAPEL HILL, NORTH CAROLINA

226. BARTHOLOMEW, S.A. Phometrics and vertical jump training. M.A. in Physical Education, 1985, 41 p. (F. Pleasants)

227. BEN, S.P. The physiological effects observed from aerobic training performed with light-resistance wrist weights by college women. M.A. in Physical Education, 1985, (P. Robinson)

228. CAVANAUGH, M.E. An investigation of the relationship between selected personality traits and the injury frequency of intercollegiate athletes. M.A. in Physical Education, 1985. 62 p. (J. Silva)

229. FISHER, S. Withdrawal from caffeine in habitual caffeine users any subsequent effects on endurance performance. M.A. in Physical Education, 1984. (R. McMurray)

230. GRAY, J.L. Shoulder flexion and back hyperextension at hand impact. M.A. in Physical Education, 1985, 57 p. (F. Pleasants)

231. HOLT, D.A. Motivation for athletic contributions to NCAA Division I-A universities. M.A. in Physical Education, 1985. (J. Billing)

232. JACOBSON, B.R. Comparison of knee extension strength gains in patients with patellofemoral pain using short-arc exercises supplemented with electrical muscular contraction, and short arc exercises supplemented with electrical stimulation at noncontractile sensory level. M.A. in Physical Education, 1984, 59 p. (W. Prentice)

233. MANDALA, J.D. Isokinectic strength values in the dominant and non dominant legs of fencers and runners. M.A. in Physical Education, 1985, 30 p. (W. Prentice)

234. PHELPS. F.M. The effectiveness of electroacutherapy in reducing ankle rehabilitation time. M.A. in Physical Education, 1985, 42 p. (W. Prentice)

235. RIEHL, R.E. Life stress and athletic injury in non-contact sports. M.A. in Physical Education, 1985, 79 p. (C. Hardy)

236. SCHILTZ, L.J. The relationship of the Minnesota leisure time activity questionnaire to aerobic capacity in premenopausal women. M.A. in Physical Education, 1985. (R. McMurray)

237. SIDAWAY, B. Movement duration on premotor time. M.A. in Physical Education, 1985, 71 p. (F. Pleasants)

238. SMITH-FORTUNE, J.A. The effect of anxiety on sport performance: A meta-analysis. M.A. in Physical Education, 1985, 142 p. (J. Silva)

239. TORISCELLI, T. A comparison of the effects of selected preventive knee braces on running speed and agility. M.A. in Physical Education, 1985, 34 p. (W. Prentice)

240. VICTORSON, D.J. The effect of iron and vitamin C supplementation on moderately active iron deficient females. M.A in Physical Education, 1985 (R. McMurray)

UNIVERSITY OF NORTH CAROLINA (M. Solleder)
GREENSBORO, NORTH CAROLINA

241. ANDERSON, L.B. A view of my personal dance aesthetic through its reflection in my work. M.F.A. in Dance, 1986, 36 p. (J. Gamble)

242. ANDREASEN, J. Content areas and presentation modes used by seventh grade teachers of a human sexuality curriculum. M.Ed. in Health Education, 1985, 112 p. (K. King)

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248. HALFORD, M. Creation/transformation. M.F.A. in Dance, 1986, 40 p. (A. Deloria)

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250. HUCKABEE, K.T. Control versus anxiety. M.F.A. in Dance, 1986, 28 p. (J. Gamble)

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254. MCKETHAN, R.M. The development and evaluation of a behaviorally anchored rating scale for secondary physical education teachers. Ed.D. in Physical Education, 1985, 235 p. (S.M. Robinson)

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261. TRACANNA, K.L. The influence of the first Anglo American workshop on elementary school physical education programs as exhibited in selected journal publications and the AAHPERD National Conventions: 1940s 1960s. M.S. in Physical Education, 1985, 197 p. (K.R. Barrett)

262. TROGDON, D.L. Physiological responses and body composition changes from training at various frequencies in middle-aged and older adults. M.S. in Physical Education, 1986, 114 p. (R.C. Gayle)

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264. WELCH, J.S. Stress levels among dental hygiene students at Guilford Technical Community College. M.Ed. in Health Education, 1985, 79 p. (K. Howell)

265. YARBROUGH, R.E. Perceptions of three black leaders of the national intramural-recreational sports association: The formative years. Ed.D. in Physical Education, 1986, 259 p. (R.A. Swanson)

266. AKERS, P.A. Value orientations of elementary classroom teachers toward physical activity for themselves and for the children they teach. Ed.D. in Education, 1985, 192 p. (S.R. Robinson)

Attitudes of ELE teachers were examined toward physical activity for themselves and for the children they teach. In Phase One, 120 teachers of grades K-5 completed 2 inventories, a Self Personal Purposes and Meanings in Movement Inventory and a Child PPMMI. In Phase Two, 10 teachers were interviewed for comments on their responses. M scores were calculated for the 22 purposes on each inventory using the variables age, grade taught, years of teaching experience, and preparatory courses in P.E. Profiles for the 10 interview teachers were developed from the inventory responses and interview data were content analyzed to identify factors that teachers reported to influence their value orientations toward physical activity. Teachers were found to value movement more highly for children than for themselves. Teachers were able to differentiate between their attitudes about the purposes of physical activity for themselves and the purposes of physical activity for children. The purposes aspect of the PPCF was a viable tool for discussion with the elementary classroom teacher.

267. DAILEY, R.J. A legal analysis of appellate level tort negligence cases in public school physical education K-12 from 1963-1983. Ed.D. in Administration, 1985, 210 p. (T.J. Martinek)

The purpose of the study was to describe the importance of court level and certain key factors on the judgments and settlements of negligence cases in physical ed. This case law study of tort liability pertains to only those negligence cases involving public school physical ed, kindergarten through 12th grade, in the United States from January 1, 1986 to December 31, 1983. The analysis of the cases in this study revealed the following conclusions: the findings of this study are consistent with the research that has been conducted in recent years concerning the implications and trends of tort negligence in physical ed; the decision of a case is not usually influenced by gender of the plaintiff or severity of injury; however, the court region where a case is heard does seem to make a diff; when cases go to a higher court level, the courts have revealed that a higher standard of care is expected when young children are involved or gymnastics is being taught; the courts expect that in order to instruct a physical ed class properly, adequate safety instruction must be given, the correct performance of a skill must be demonstrated or made clear, and the progression children use in learning a skill or activity must be prudent. Improper, inadequate, or lack of supervision are not defined well by the courts.

268. GASKIN, L.P. Court decisions in school athletic, physical education, and intramural programs in which the condition of equipment and facilities has been alleged as the proximate cause of injury to participants and spectators. Ed.D in Physical Education, 1986, 167 p. (R. McGee)

Each case was analyzed to determine the school-sponsored sport program in which the injury occurred and the age, role, and sex of the injured party, and the sport or activity in which the injury occurred. 4 trends emerged from the study: in comparison with the 13 equipment cases, the larger no. of 48 facility cases is sig; the number of reported cases based on the doctrine of governmental immunity did not decrease through the yrs as was anticipated, but remained relatively constant within and across the decades; the number of equipment and facility cases does not seem to support the observation that America is becoming an increasingly litigious society,

generally neither age, role, sex of the injured party, or the sport or activity within which the injury occurred would appear to influence the decision of the court. Court decisions consistently have been based on the presence or absence of the four elements necessary to prove negligence and the legal principle applied. Only when the defense of contributory negligence has been used have the courts considered age as a factor. The younger the injured party, the less likely the defense of contributory negligence will be upheld.

269. GILLIS, J.H. Doctoral dissertations in physical education: A twenty-year portrait. Ed. D. in Physical Education, 1986, 141 p. (P. Berlin)

This research project described selected characteristics of doctoral dissertations written by students in PE departments in the US from 1964 through 1983. Through a process of sequential matching of listings in Dissertation Abstracts International, Completed Research in Health, Physical Education, and Recreation, and American Doctoral Dissertations, a population of 5344 dissertations was identified. For each dissertation, the degree, the year, the college or university, the dissertation advisor(s), and the prestige ranking of the PE doctoral program were recorded. Each abstract or title was coded for the academic specialty of PE it reflected and for the primary research strategy that was used. Selected results included: functional effects was the most common academic specialty; most of the degrees earned were Ph.D. degrees; descriptive research was the most frequently used research strategy; more dissertations were written in programs with high prestige than in programs with low prestige; and there was limited specialization reflected in the advising of the most prolific advisors. Trends in the academic specialties, degrees, and research strategies from 1964 to 1983 were identified. The results were discussed within the context of doctoral study in PE, with extrapolation to the field of PE in higher ed as a whole.

270. HARPER, W.K. A study of state winners of secondary school athletic director of the year award and the perceptions of their own administrative behavior. Ed.D. in Physical Education, 1986, 196 p. (R. McGee)

90 state Secondary School Athletic Director of the Year Award winners were surveyed in order to examine the perceptions of their own administrative behavior. 3 survey instruments were

used to gather data for this study: The Responsibility, Authority, and Delegation Scales, the Work Analysis Form, and the Leadership Opinion Questionnaire. A biographical information section was also used to obtain a profile of the sample. Results of the Responsibility, Authority, and Delegation Scales indicated that ADs perceived their responsibility and authority roles almost to the same degree but higher than their delegation role. 3 activities indicated by ADs on the Work Analysis Form as consuming the greatest amount of their professional time were consulting peers, preparing and writing reports, and inspecting the organization. Results of the Leadership Opinion Questionnaire revealed that ADs scored higher on the structure dimension than the consideration dimension, an indication that athletic directors in this study were more likely to be task oriented than relationship oriented.

271. JENKOT, V.K. Feasibility of large scale implementation of the component approach for assessment of fundamental motor skills in grades K-3. 1986, 128 p. (K. Barrett)

The study examined the implementation procedures involving objectivity training, videotaping, and coding along with parental reactions to developmental information. Ss were 206 male and female students in grades K-3 who were videotaped performing 2 skills: hop and skip. 2 coders were trained to use the Roberton and Halverson component approach to .80 exact agreement prior to coding. Exact percent agreement and Cohen's Kappa coefficient of objectivity were used to examine percent of coder agreement. Objectivity was assessed prior to, at the midpoint, and one week following coding. Acceptable level of agreement was maintained except for 1 component (hop-arms) for Coder #2 on the final assessment. Parents of each S received a developmental profile, a letter of explanation and a brief questionnaire. Comments reflected an interest in norm relating this information. Results demonstrated feasibility with recommendation for standarized training procedures.

272. PARKE, J.E. Comparisons of decision-making styles of Florida community and junior college department chairpersons and division directors. Ed.D., 1985, 136 p. (R. McGee)

The purpose of this study was to determine and then compare the decision-making styles of academic administrators. 108 community and junior college department chairpersons and

divisions indicated their decision-making style for each of 30 cases involving problems in higher ed based upon the Vroom-Yetton decision model. The results were as follows: chairpersons and directors were consultive in their decision-making with a M score of 5.37; decision-making styles varied, however, and were contingent upon the situation or problem. Chairpersons and directors were participative in their decision-making style regardless of age, administrative experience, discipline, sex, or college or campus affiliation, male and female chairpersons and directors were not sig diff in their decision-making style regardless of age, administrative experience, discipline, or college or campus affiliation; decision-making styles of physical ed chairpersons and directors and nonphysical ed chairpersons and directors were not sig diff regardless of age, administrative experience, sex, or college or campus location.

273. SATERN, M.N. The effect of ball size and basket height on the mechanics of the basketball free throw as performed by seventh grade boys. Ed.D in Biomechanics, 1986, 122 p. (S.P. Messier)

The mechanics of the basketball free throw as performed by 13 seventh grade boys were analyzed. 2 ball sizes, regulation and intermediate, in combination with two basket heights, 10-foot and 8-foot, were used. Sagittal and frontal views of repeated trials were filmed with two LoCam cameras. 2 successful trials per S under each of the 4 environmental conditions were digitized. Statistical analysis revealed sig diffs ($p \leq .05$) for the main effect of basket height and non-sig diffs ($p > .05$) for the main effect of ball size for the following kinematic parameters: the angle of projection of the basketball; the release angle of the shoulder; the starting angle of the elbow; and the forearm in relation to the vertical at ball release. Sig interaction effects were also revealed. Descriptive analysis revealed: increased horizontal displacement of the M center of gravity under the regulation environmental condition; similar M linear velocities at ball release; similar M angles of trunk inclination; similar M wrist angular velocities; and similar timing and coordination of upper and lower body joint actions across the 4 environmental conditions. The results suggest that the use of developmentally appropriate basketball equipment may help build a sound foundation in this fundamental basketball skill.

274. TRITSCHLER, K.A. Use of statistics in recently-published physical education research. Ed.D. in Physical Education, 1985, 185 p. (P. Berlin)

Recently-published physical ed research was sampled and content analyzed in order to determine the types and frequencies of statistical techniques reported. Also investigated were: complexity of the data that were analyzed; frequency and levels of sig testing, assumption testing, and data transformation; and characteristics of the reporting of statistical analyses. Results revealed that a wide variety of statistical techniques were used, with the majority of the studies employing at least 1 inferential analysis. Multivariate analyses were employed in 25.8% of the research reports. A p value of .05 was the most commonly reported alpha level, although most studies failed to state a criterion alpha. Among the inferential studies, 98% reported statistical "sig" of their findings. Zeigler's (1983) subspecialty categories were used to classify studies in order to determine how statistic use varied by subspecialty focus. Multivariate techniques were reported most frequently in Measurement & Evaluation research and least frequently in Functional Effects of Physical Activity research. Nonparametric techniques were reported most in Management Theory & Practice research; no nonparametrics were observed in research classified as Functional Effects of Physical Activity and/or Mechanical & Muscular Analysis of Motor Skills.

UNIVERSITY OF NORTHERN COLORADO (M. Behling)
GREELEY, COLORADO

275. GREEN, W.K. Analysis of selected factors perceived important to continued involvement in adult women's club field hockey. Ed.D. in Physical Education, 1985, 159 p. (C. Cody)

Social exchange theory was utilized in analysis of perceived levels of personal resources and sport environment situations as incentives for participation in club field hockey. Ss were 108 women field hockey association members from 7 USFHA sections. Subgroups were compared, based on involvement experiences: non-selected, selected, past-selected; player only, multiple role; 1-4, 5-9, 10+ years of membership. Perceived resource levels and importance of incentives were measured by questionnaire. Multiple regression analyses indicated 7 resources contributed sig to variance of incentives: levels of participation, interest in the USFHA,

playing skill, umpiring skill, contribution to group goals, and interest in field hockey. ANOVA revealed non-selected players had sig lower perceived levels of 7 resources; multiple role members sig higher perceived levels of 3 resources. ANOVA indicated skill, social, and reward incentives were sig more important to multiple role members; skill incentives sig more important to 5-9 yr members. Current selection and/or multiple role involvement may further continued participation in field hockey because of higher perceived levels of resources valuable to organization membership and higher importance of specific sport environment factors.

276. REGIMBAL, L. The effects of intervention of teacher behaviors, engaged skill learning time and student achievement. Ed.D. in Physical Education, 1985, 61 p. (D.A. Phillips)

12 volunteer PE teachers and approximately 12 students from each of their schools were randomly divided into control & intervention groups. Teacher and student pre- and post-test data were collected using the Physical Education Teaching Assessment Instrument (PETAI) designed by Phillips and Carlisle, videotape recordings, and a 5-item skills test. Teachers in the intervention group were asked to participate in a 7-week inservice program. No restraints or guidelines relative to instruction, teaching styles, or content of subject matter were imposed by the investigator. Data were analyzed using independent and dependent t tests. It was found that teacher behaviors can be changed through intervention and that the change is positively related to changes in Engaged Skill Learning Time and Student Management Time. No relationships were found between changes in Engaged Skill Learning Time and student achievement or between changes in teacher behaviors and student achievement. Three conclusions were: teacher behaviors can be altered through intervention; charges can be made in Engaged Skill Learning Time; and these changes are related to changes in teacher and changes in student achievement are not related to changes in teacher behaviors and Engaged Learning Time.

UNIVERSITY OF OREGON (E.R. Reuter)
EUGENE, OREGON

277. BRUSTAD, R.J. Competence perceptions and sources of worry in high, medium, and low competitive trait anxious in young athletes. M.A. in Physical Education and Human Movement Studies, 1985, 88 p. (M.R. Weiss)

278. CAPEL, S.A. Psychological and organizational factors related to burnout in athletic trainers. Ph.D. in Physical Education and Human Movement Studies, 1985, 88 p. (B.L. Sisley)

The sample included 332 full-time or part-time (employed over 20 hours per week) certified athletic trainers. Multiple regression was used to analyze the influence of role conflict, role ambiguity, locus of control, number of athletes in the athletic trainer's direct care and number of hrs per wk in direct contact with the athletes on a composite measure of burnout. Multivariate regression analyses were used to determine the influence of these 5 independent variables on: burnout frequency and intensity; and emotional exhaustion, depersonalization and personal accomplishment subscales or burnout. In addition, ANOVA was used to determine if selected demographic variables influenced burnout. All burnout scores were measured by the Maslach Burnout Inventory. 4 of the psychological and organizational variables contributed sig to the variance in the measure of total burnout. These were role conflict, role ambiguity, locus of control, and number of hrs in direct contact with the athletes. All 5 variables contributed sig to the variance in burnout frequency and intensity. The result, indicated that high role conflict, high role ambiguity, and an external locus of control result in higher burnout, higher frequency and intensity of burnout, higher emotional exhaustion and depersonalization and lower personal accomplishment in athletic trainers.

279. DOWNING, J.H. Parents' and teachers' opinions of the critical factors essential for mainstreamed physical education programs for physically exceptional students at the elementary level. Ph.D. in Physical Education and Human Movement Studies, 1985, 107 p. (E. Wooten-Kolan)

An opinionnaire was developed from current literature and law (P.L. 94-142) and sent to parents and PE teachers of physically exceptional students in the Monmouth County, NJ ELE schools. 75 parents and 101 teachers responded. ANOVA were performed on each opinion and Ms and rankings for each individual item were determined. The results of the analyses showed that all of the opinions of parents and teachers were sig diff ($p < .01$) except for the opinion concerning the student's size. The rankings, however, showed some similarities. Class size was considered by both groups to be the most important variable to consider, while

parent and teacher interest and support were ranked 2nd. Both groups found ambulation, academic skill, age, physical size and learning ability as low priority items in their rankings The opinions of both groups were factor analyzed. The teachers' opinions yielded 6 factors. Factor 1 was physical health/communication/motivation; factor 2 was academic; factor 3 was interest and support/class size; factor 4 was physical ability/age; factor 5 was socio-emotional status; and factor 6 was size. The parents' opinions yielded 4 factors. Factor 1 was academic growth and development/communication; factor 2, physical health/social-emotional/motivation/class size; factor 3, interest and support; and factor 4, physical ability.

280. GOULDING, C.S. The relationship between brain hemispheric processes and 3 systems of knowledge within dance education: labanotation, effort-shape and ideokinesis. M.A. in Dance, 1985, 98 p. (J. Meglin)

281. HARRIS, R.S. The effects of two types of goal setting instruction on the development of physical fitness self-efficacy and physical fitness in middle school students. Ed.D. in Physical Education and Human Movement Studies, 1984, 141 p. (E.R. Reuter)

176 7th and 8th grade boys and girls from Briggs Middle School in Springfield, OR participated in this study. Data were generated from Ss responses to a physical fitness self-efficacy scale and from performance on a 4-item physical fitness test. Treatment of the data were performed using 3 correlated t-tests to test the hypothesis that there would be sig pretest to posttest diff with each group; a one-way ANCOVA to test the hypothesis that different modes of teaching fitness skills enhance self-efficacy would be associated with diff changes in performance; and determine the relationship between self-efficacy and performance. The primary findings were: Ss in the 2 goal-setting groups sig increased their physical fitness self-efficacy, whereas Ss in the control group did not; Ss in the Proximal Subgoal Group had a sig higher level of physical fitness self-efficacy than did Ss in the other groups; all 3 groups improved their M posttest fitness level from their pretest level, but the diff between the groups were not sig and there was a sig relationship between self-efficacy and fitness performance in each group.

282. HIGGS, C. Job satisfaction of Canadian university physical education faculty: the influence of work orientation, career state, role conflict, and role ambiguity. Ph.D. in Physical Education and Human Movement Studies, 1985, 147 p. (B.L Sisley)

The population for the study consisted of full-time faculty members employed by universities in Canada's 9 Anglophone provinces. A random sample of 225 faculty members (40% of the population) was sent individualized letters requesting that they complete a questionnaire which consisted of scales to measure each of the variables. 150 returns were usable in subsequent analysis. Analysis was undertaken using ANOVA and multivariate multiple regression techniques. The results indicated that as a group the sample exhibited a work orientation which was strongly cosmopolitan. The respondents were sig more satisfied with the intrinsic aspects of their work than with the extrinsic aspects. The following sig, inter-group diff were noted: females had sig lower extrinsic satisfaction scores, females held fewer positions of higher academic rank, females were less likely to be tenured, local work orientation increased with age, extrinsic satisfaction increased with age, non-tenured faculty members exhibited higher role ambiguity, non-tenured faculty had lower extrinsic satisfaction scores. Regression analysis showed that the degree of local work orientation and the extent of role ambiguity were sig predictors of intrinsic job satisfaction, while university rank, local work orientation and role conflict were sig predictors of extrinsic job satisfaction.

283. KLINT, K.A. Participation motives and self-perceptions of current and former athletes in youth gymnastics. M.S. in Physical Education and Human Movement Studies, 1985, 101 p. (M.R. Weiss)

284. LETTUNICH, J. The University of Oregon community health improvement program: effect of training on cardiorespiratory fitness, body composition, serum lipids, and glucose in middle-aged females. M.S. in Physical Education and Human Movement Studies, 1985, 99 p. (E. Wooten-Kolan)

285. TORODE, M.E. Effects of prolonged exercise on the ultrastructure of the pancreatic beta cell and the morphology on the islet of Langerhans. Ph.D. in Physical Education and Human Movement Studies, 1985, 95 p. (E. Wooten-Kolan)

Male, Sprague-Dawley rats were divided into exercise and

sedentary-control groups. The exercise group underwent a swimming program 1 hr per day, 5 days per wk, for 8 wks. At the conclusion of the 8 wk swimming program, rats were sacrificed and blood and pancreatic tissue samples were collected. The tissue was fixed for light and electron-microscopy analysis. The light microscopy analysis revealed a sig ($p < .05$) greater number of islet of Langerhans per volume of tissue analyzed in the exercised animals. The M volume of the islet of Langerhans was not sig diff between the 2 groups, nor did it differ as a ratio of islet volume to volume of tissue analyzed. The results of the electron microscopy investigation revealed a sig ($p < .05$) greater no. of beta granules in the exercised animals. The beta cell granule halo was sig ($p < .05$) larger in size in the exercised animals. The endoplasmic reticulum and Golgi apparatus were subjectively assessed as being sparsely distributed in the exercised animals. The distribution of mitochondria was more numerous in the exercised group, with an apparent variation in the internal structure between the exercised and control animals. The exercised animals' mitochondria displayed more distinct membrane and cristae complexes and a more granular matrix.

UNIVERSITY OF SOUTHERN MISSISSIPPI (C. Wilkes)
HATTIESBURG, MISSISSIPPI

286. ABADIE, B.R. The physiological and psychological effects of an endurance exercise program on an older adult population. Ed.D in Health, Physical Education, and Recreation, 1984, 145 p. (D. Cundiff)

Specific physiological and psychological benefits older adults (ages 60-81) received through participation in an endurance exercise program was investigated. More specifically, would older adults who have participated in an endurance exercise program demonstrate a sig improved score on each of the following dependent variables: death anxiety, trait anxiety, perceived physical fitness, and cardiorespiratory endurance when compared to a similar group of older adults who have not participated in an endurance exercise program. This study also attempted to determine if there is a sig independent relationship between each of the above mentioned dependent variables. 17 experimental and 15 control Ss completed pre- and post-testing on each of the following variables: death

anxiety, trait anxiety, cardiorespiratory endurance, and perceived physical fitness. Experimental Ss participated in a 12-wks endurance exercise program. The program required Ss to exercise at an intensity of 60% of VO_2 max for a duration of 30 min per day at a frequency of 3 days per wk. ANCOVA was used to determine whether the dependent variables demonstrated a sig diff between the experimental and control S's post-test scores when the pre-test scores were held constant. Partial correlation was used to determine whether a sig independent relationship existed between each of the dependent variables. ANCOVA did not reveal a sig diff between the experimental and the control S's post-test scores when the pre-test scores were held constant for each of the following variables: death anxiety, trait anxiety, and perceived physical fitness. A sig diff was observed between the experimental and the control S's post-test scores when the pre-test scores were held constant for the variable of cardiorespiratory endurance. Partial correlation revealed a sig independent relationship between the variables of perceived physical fitness and trait anxiety and death anxiety and trait anxiety. Partial correlation failed to reveal a sig independent relationship for all other correlations analyzed in this study.

287. CARLETON, M.V. Anatomical dissection of the knee: An analysis of form, function, and injury. M.S. in Exercise Physiology, 1985, 128 p. (T. Boone)

The left knee of a white male cadaver was dissected from superficial to deep layers. Each layer and structure exposed was recorded on 135 mm color slides and reproduced in illustrations. The investigator dissected the knee to the capsule demonstrating its ligamentous support. During the course of the dissection, the investigator demonstrated the origins and insertions of the muscles and ligaments which crossed the joint. The capsule of the knee was dissected transversely to expose the structures inside the capsule. An analysis was made of the structure of the patellofemoral and tibiofemoral articulations with an emphasis on movement and stability. The muscles and ligaments were analyzed for their function in the stability of the knee in movement. Also, an analysis was made of the sports related injuries to the structures of the knee with an emphasis on the functional stability of the knee.

288. COLLIGON, J.C. Influence of religiosity and religious denomination on risk of coronary heart disease, selected controllable risk factors, and health habits. Ed.D. in Physical Education, 1985, 530 p. (D. Cundiff)

This study evaluated the influence of religiosity and religious denomination on coronary risk, selected controllable risk factors, and health habits of 113 Caucasians, between the ages of 31 and 50, and members of either the Southern Baptist or Seventh-day Adventist denomination. Religiosity, health habits, and coronary risk scores were assessed by questionnaires and/or specific laboratory techniques. The results of this study did not support a statistically sig inverse relationship ($p > .05$) between coronary risk and religiosity, however, a sig inverse relationship was found between stress and religiosity as well as sig direct relationships between physical activity, Health Habit Index, and the number of positive health habits and religiosity. The results also did not support a statistically sig diff ($p > .05$) in coronary risk between the 2 denominations, however, sig lower risk scores for smoking, stress, and Type A behavior were found for the Adventists. The Adventists also had sig higher Health Habit Index scores and higher number of positive health habits. It was concluded that the more religious individual may have a protective advantage against lifestyle related diseases which are influenced by stress and/or physical activity; and the health practices followed by the Adventists may offer protection against some lifestyle related diseases.

289. CORTES, C.W. The effects of a one-time progressive muscular relaxation session on cardiovascular responses to two submaximal workloads on the treadmill. M.S. in Exercise Science, 1985, 61 p. (T. Boone)

Previous investigators have yielded conflicting results in testing the hypothesis that oxygen consumption is considered to be predictable and unalterable during fixed effects of a 1-time 35-min progressive muscular relaxation session on submax oxygen uptake and lemodynamic measures. 20 sedentary females volunteered to participate in 3 phases of the investigation. Phade I, Familiarization; Phase II, Relaxation Treatment Test; and Phase III, Control Test. Following Phase I, all Ss were randomly scheduled for Phase II and III. The responses that were monitored included oxygen uptake (VO_2), heart rate (HR), frequency of breaths (f_R), expired ventilation (V_E), systolic blood pressure (SBP), and double product (DP). Statistical

analysis suggests that the steady-state exercise means at 60% and 85% subsequent to the 1-time 35-min relaxation session were not sig diff from the Ms observed at both workloads without relaxation.

290. HUMPHRIES, E. The effects of relaxation response practiced during steady rate exercise. M.S. in Physical Education, 1985, 43 p. (W.T. Boone)

The purpose of the study was to investigate the effects of the relaxation response practiced during sub max, steady-rate exercise. In eliciting a relaxation response during exercise, could the efficiency of the oxygen transport system be improved without prior practice? To answer this question, we monitored oxygen consumption, HR, ventilation, frequency of breaths, and tidal volume of 10 females aged 17 to 29 yrs. The Ss walked on the treadmill 2.6 m/hr for 27 mins. The 9 min relaxation messages (T) was compared to 2 nine min sessions (before and after T) without any messages. All measurements were taken each min for the 27 min. From a single relaxation session during exercise ventilation and oxygen consumption increased instead of decreased as previous studies suggested. The HR remained in a steady state throughout the study which indicated that a hypometabolic state was not achieved. To conclude the results, listening to a taped relaxation message for the first time while exercising would not produce a hypometabolic state.

291. JOHNSON, J.C. A study of emotional maturity and purpose in life among accident free and accident repeating industrial workers. M.S. in Health and Safety Education, 1986, 42 p. (N.R. Boyd)

The research was designed to determine whether accident repeaters differ from accident free individuals on The Revised Huffman Inventory and the Purpose in Life Test. Ss consisted of a high accident group and an accident free group at a large industrial plant in East Central Mississippi. The Revised Huffman Inventory and the Purpose in Life Test were administered to gather data. Once the data was collected, a one-way ANOVA was used in analyzing M score differences. M scores and SDs for each group were also obtained. The results indicated that the accident repeater group scored sig lower on The Revised Huffman Inventory and the Purpose in Life Test than the accident free group. It was concluded that emotional maturity and purpose in life play sig roles in accident causation.

292. KREIDER, R.B. The effects of two bicycle ergometry intensities on the cardiovascular system prior to two treadmill running intensities. M.S. in Exercise Physiology, 1985, 86 p. (T. Boone)

19 college males (M age 22.20) participated in this research study designed to investigate the relationship of ergometric cycling performed immediately prior to treadmill running. The study consisted of 4 sessions: familiarization, control run, BE 60, and BE 80. The familiarization session was utilized to acquaint the Ss with the testing protocol and apparatus. The 2nd session was used to determine the control run data in which the Ss walked for 3 min (2 mph, 0% grade) on the treadmill (TM) immediately followed by running for 5 min at both 4 and 6 mph. The following 2 testing sessions involved the implementation of ergometric cycling prior to the TM protocol. The Ss were randomly assigned workloads of either 300 kpm/min (BE 60), or 600 kpm/min (BE 80), at 60 RPM, for 10 min immediately prior to TM running. Data were collected following the 10th min of cycling and the 5th min of TM running at both 4 and 6 mph. The ANOVA for repeated measures statistical method was used to analyze the data. In comparison to the control run data, the BE 60 cycling treatment demonstrated sig increases ($p < .05$) in: VO_2, METS, Q output, SV, and A-VO_2 diff following 5 min of TM running at 4 mph. However, following TM running 6 at mph only SV was sig increased. The BE 80 treatment at 4 mph elicited sig increases in: VE, VO_2, HR, METS, Q, SV, and A-VO_2 diff. This cycling treatment also demonstrated sig decreases in SBP, DBP, and MAP. At 6 mph following the BE 80 treatment, sig increases were observed in: VO_2, METS, Q, SV A-VO diff. The results suggest that following the cycling treatments, TM running tended to be less hemo-dynamically stressful, as well as less efficient to the cardiovascular system.

293. GARRAWAY, J.F. The effects of whirlpool baths on the hemodynamics of the cardiovascular system. M.S. in Exercise Science, 1985, 73 p. (T. Boone)

16 male and 16 female Ss (18-30 years) were utilized in the study to evaluate what effect the intense heat of a whirlpool bath might have on respiratory, hemodynamic, and cardiovascular variables. These variables were measured during a 10-min whirlpool bath at a pool temperature of 106° F. Specifically, BP, HR, oxygen uptake, and ventilatory values were measured directly while secondary calculations were done to determine cardiac output, stroke volume, arteriovenous oxygen difference,

myocardial oxygen demand, double product, and mean arterial pressure. Results demonstrated a linear rise in ventilation with respect to time spent in the whirlpool with the male Ss while the females' values remained constant with no sig change. HR, double product, and myocardial oxygen demand also showed a linear rise with respect to time spent in the whirlpool in both sexes. On the hand, BP, SV, and M arterial pressure declined with continuing time spent in the whirlpool in both sexes. Cardiac output, oxygen consumption, and arteriovenous oxygen difference remained non-sig with respect to time spent in the whirlpool bath. Following analysis of data, the whirlpool bath represents no element of risk for the healthy male or female who uses the whirlpool in moderation. However, with the linear increase in myocardial oxygen demand (MVO_2) associated with continuing time spent in the whirlpool, the coronary-prone individual should use the bath only in moderation or under the direction of a physician.

UNIVERSITY OF TENNESSEE (R. Jones)
KNOXVILLE, TENNESSEE

294. BUCKLES, T.M. The effects of visuo-motor behavior rehearsal on competitive performance tasks, anxiety, and attentional style. Ph.D. in Education, 1985, 141 p. (P.A. Beitel)

295. CHESNEY, M.C. The incorporation of sleep and dream research into the choreography of for a brief moment... M.S. in Education, 1985, 65 p. (M.G. McCutchen)

296. CLAYTOR, R.P. Selected cardiovascular, sympathoadrenal, and metabolic responses to one-leg exercise training. Ph.D. in Education, 1985, 92 p. (E.T. Howley)

297. COPELAND, B.L. The effects types and intensities of background music on treadmill endurance. M.S. in Education, 1985, 60 p. (B.D. Franks)

298. DRAPER, M.V. Sport team cohesion: Goal orientation as a function of level of sport involvement. M.S. in Education, 1985, 61 p. (C.A. Wrisberg)

299. EVANS, J.T. The effects of a free-weight power program and a high-intensity Nautilus program on muscle strength, lean body mass, and leg power. M.S. in Education, 1985, 55 p. (E.T. Howley)

300. GOSSELIN, L.E. Effect of ventilatory muscle endurance training on running performance time of healthy young men. M.S. in Education, 1985, 44 p. (H.G. Welch)

301. HAMBY, S.J. Improvisational methods used in the choreography of all things unconsidered. M.S. in Education, 1985, 96 p. (M.G. McCutchen)

302. LEHMANN, S.S. Images from the floating world - a concept for movement based in Zen asthetics. M.S. in Education, 1985, 96 p. (M.G. McCutchen)

303. MARTIN, A.D. Chronic obstructive pulmonary disease patients and healthy subjects: A comparison of ventilatory patterns used during maximal exercise and predicting maximal oxygen uptake from resting pulmonary function testing. Ph.D. in Education, 1985, 86 p. (E. T. Howley)

304. MYERS, B.C. Coronary heart disease risk factor variables in black and white females aged 18-24 years. Ph.D. in Education, 1984, 145 p. (B.D. Franks)

305. PYKA, I.B. Effects of high frequency electrical muscle stimulation on dynamic strength of the quadricep. M.S. in Education, 1984, 55 p. (E.T. Howley)

306. SANDERS, M.T. Effects of augmented feedback on the acquisition of a motor skill in two different environmental conditions. Ed.D. in Education, 1985, 85 p. (P.A. Beitel)

307. SCHLIESMAN, E.S. Relationship between the congruence of preferred and actual leader behaviors and subordinate satisfaction with leadership. M.S. in Education, 1985, 74 p. (P.A. Beitel)

308. VANROSSUM, P.G. A comparison of blood lactate concentrations following submaximal aerobic dancing and jogging at equal heart rates. M.S. in Education, 1985, 74 p. (E.T. Howley)

309. WOOD, D.K. The effect of two free weight training programs on selected closed motor skills. Ed.D. in Education, 1984, 103 p. (P.A. Beitel)

310. WRIGHT, M.S. Effects of high frequency electromuscular stimulation on isokinetic strength of the quadriceps muscle group in active, young adults. M.S. in Education, 1985, 51 p. (E.T. Howley)

UNIVERSITY OF TEXAS (M. Steinhardt)
AUSTIN, TEXAS

311. BOGGESS, T.E. A study of the implicit benefits about curriculum and instruction of physical education teachers with varying years of experience. Ph.D. in Education, 1985, 134 p. (D.C. Griffey)

The study investigated the implicit beliefs of physical education teachers. Kelly's repertory grid technique (1955) provided a mechanism for eliciting thoughts about teaching. 20 secondary physical education teachers with varying years of experience were interviewed. This sample was chosen to look for any possible developmental trends in the data. The resulting data was factor analyzed using a principal components analysis with varimax rotation. The results from the factor analysis served as the basis for the second interview during which the teacher was told about the factors and asked in explain how the factors fit into the teacher's belief system about teaching. The second interview was audiotaped and teachers' belief statements were categorized into 4 belief domains: curriculum, instruction, teachers, and students. Diffs appeared in the ways that teachers coped with the complexities of their environments. Beginning teachers were trying to understand the ambiguities of the role of teacher and gain cooperation of students in class activities. With experience in the classroom environment, teachers reduced some of the complexities and ambiguities and expanded their realities to include beliefs about specific instructional strategies and long-range goals for students' learning.

UNIVERSITY OF WISCONSIN (E. Roberts)
MADISON, WISCONSIN

312. ANDERSON, L.L. Glycogen synthase in canine skeletal muscle: Effects of acute and chronic exercise in normals and diabetics. Ph.D. in Physical Education, 1985, 119 p. (M.J. Safrit)

6 normal (N) and 6 alloxan-diabetic (D) (50-60 mg alloxan monohydrate/kg body wt) dogs were treadmill exercise trained on 3 legs (1 hindlimb bound) at 80% maximum HR for 1 hour/day, 6 days/wk, for 5 wks. Diabetics received a daily insulin injection to maintain moderate diabetic control (glucosuria, non-ketosis) throughout the training period. The training period was preceded and followed by an exhaustive exercise bout

(3-31/2 hr) to compare glycogen synthase responses to acute exercise-induced depletion of glycogen in the trained (T) and untrained (U) state. To further deplete glycogen reserves, exercise was preceded by a 48 hr fast in (N) (18 hr in (D)). Biopsies of m. rectus femoris were taken from sedated dogs at rest and at 0, 4, 8, 12, and 24 hrs post exhaustion. Glucose (50% solution, 5 ml/kg body weight) was administered orally after biopsies at 0, 4, and 8 hrs to ensure carbohydrate ingestion during each 4 hr period; laboratory chow was available ad lib throughout the recovery period. Extracts of the muscle biopsies were assayed for glycogen, soluble protein, and glycogen synthase activation, as measured by total activity, Vmax, activity ratio (-G6P/+G6P)(AR), fractional velocity (low G6P/high G6P, + Pi) (FV), and $S_{0.5}$. Glycogen was depleted and began to resynthesize in the first 4 hour period, but had not returned to resting levels by 24 hrs post exhaustion, possibly due to complications in glucose absorption. 3 factor ANOVA with repeated measures was performed on AR, FV, and $S_{0.5}$.

313. BROWN, D.R. Development of a psychological scale for evaluating athletic potential using empirical and intuitive test construction strategies. Ph.D. in Physical Education, 1985, 131 p. (W.P. Morgan)

Empirical and intuitive approaches to test construction were compared in an attempt to develop a personality scale for discriminating effectively between successful and unsuccessful athletes. 2 groups, each containing subgroups of 92 successful and 92 unsuccessful athletes, served as Ss in this investigation, which was prospective in nature. 8 scales were developed using items from the Minnesota Multiphasic Personality Inventory (MMPI) item pool. 2 scales were constructed using an empirical approach, and 4 scales were developed using an intuitive method of test construction. 4 groups of item selectors, 10 in each group, were used to derive the intuitive scales. Another scale was formed from items endorsed as having potential to discriminate between successful and unsuccessful athletes by at least 3 out of the 4 groups of judges. A final scale was developed based on a random selection of MMPI items. The alpha reliabilities of the scales were computed, and the effectiveness of each scale was assessed using discriminant function analysis and a double cross-validation design. All scales except for the scale developed by random item selection were reliable. However, all scales lacked validity as none correctly classified

successful and unsuccessful athletes above chance level. The effectiveness of the intuitively developed scales was thought to be restricted by the pool of items rather than by the actual decision-making abilities of the judges, as good objectivity existed among the 4 groups of item selectors. A series of post hoc analyses were conducted to evaluate the effectiveness of using some of the MMPI validity and standard scales to discriminate between the successful and unsuccessful group of athletes. It was concluded that the greatest benefit of assessing the personality of athletes may be to identify those athletes experiencing serious pathology.

314. FREGOSI, R.F. Effects of acute and chronic exercise on respiratory muscle biochemistry and bioenergetics. Ph.D. in Physical Education, 1985, 185 p. (W.G. Reddan)

We sought to determine if chronic endurance training would increase mitochondrial respiration or protein content in rat diaphragm muscle. To this end, 20 male Wistar rats were randomly assigned to control (C) or an 8 wk endurance training (T) group, n= 10/group. At the end of T, VO_2 max increased 13% in T (83.3 vs 73.8 ml/kg/min.) and peak max power output increased 32% (2.63 vs 1.98 KgM/min). Mitochondrial pyruvate-malate respiration and cytochrone oxidase activity (expressed per mg mitochondrial protein) were not changed with T in either plantaris or diaphragm, and mitochondria from T muscles generated normal ADP/O and respiratory control ratios. When expressed per gm wet wt, whole muscle homogenate oxygen uptake (pyruvate + Malate) and cytochrome oxidase activity increased 36 and 23%, respectively ($p < .05$) in plantaris but did not change in diaphragm. C oxidative capacities in diaphragm were N 2 fold those in C plantaris, and 3 independent estimates showed that mitochondrial protein in C diaphragm was 2-3.3 fold < C plantaris. Plantaris responded to T with a 24-63% increase in mitochondrial protein while the diaphragm was unaffected. Thus, in the face of a substantial training effect in whole animal and plantaris, the T stimulus was not sufficient to induce mitochondrial protein changes in the diaphragm. This is most likely the result of a "pre-adaptation" secondary to the diaphragm's high level of chronic activity.

315. LAURENCE, P.C. The accuracy of reproduction of rhythmic patterns as a function of their order and serial position. Ph.D. in an interdisciplinary approach to rhythm in dance, a perceptual-motor phenomenon (Committee degree), 1985, 99 p. (G.E. Stelmach).

12 musically trained and 12 untrained Ss were tested for accuracy of reproduction of rhythmic patterns in a key pressing experiment. 2 types of rhythmic patterns of 5 musically relevant intervals were examined. In the first type, intervals 525 and 175 ms were tested, and in the second type, intervals 350, 175 and 175 ms were examined. Reproduction performances were assessed in terms of deviation scores (in ms) for individual intervals. Type one data revealed a statistically sig diff in reproduction accuracy of the 525 interval related to order of intervals. Data from Type two rhythmic patterns showed sig main effects of order and training and several two-way and three-way interactions between the 5 parameters under hypothesis for the 350 interval. It was concluded that: intervals organized in a long-short order are reproduced more accurately than in a short-long interval; within beat intervals proceeded by undivided beat intervals are imitated more accurately than those which initiate the rhythmic pattern; and musically trained Ss reproduce rhythmic intervals more accurately than untrained Ss. It is suggested that interval relations alone may not entirely account for reproduction accuracy of time intervals embedded in a musical context.

316. JI, L.L. Skeletal muscle and hepatice enzyme adaptation to physical training under beta-adrenergic blockade in the rat. Ph.D. in Physical Education, 1985, 115 p. (R.G. Kochan).

To study whether or not a functional B-adrenergic system is essential for the training-induced adaptation of various enzyme activities in skeletal muscle and liver, 42 male Sprague-Dawley rats were randomly assigned to 5 groups: trained without drug (TC), trained with non-selective -blocking drug propranolol (30 mg/kg bw, TP), trained with selective 1-blocking drug atenolol (10 mg/kg bw, TA) sedentary without drug (SC) and sedentary with propranolol (30 mg/kg bw, SP). The trained animals were run on treadmills 1 hr/day, 5 days/wk for 10 wks at 26.8 m/min, 15% grade. Doses of both -blockers were titrated to decrease the exercise HR by 25%. After training, there was a sig increase in the activities of skeletal muscle citrate synthase (CS)(+50%, $p < 0.01$), cyochrome c oxidase (+38%, $p < .05$), mitochondrial malate dehydrogenase (MDH)(+26%, $p < .05$) and alanine aminotransferase, (ALT)(+38%, $p < .05$), carnitine palmitoyltransferase, (+30%, $p < .05$), and B-hydroxyacyl CoA dehydrogenase. (HADH)(+47%, $p < 0.001$) in TC group. There was no sig alteration in these enzyme activities in TP group compared to SP. In the TA group, CS and HADH activities were sig higher ($p < .05$) than in SC. None of the skeletal muscle enzyme activities in TA was sig diff from that

in TC. Hepatic gluconeogenic enzyme phosphoenolpyruvate carboxykinase and fructose-1, 6-bisphosphatase activities did not change and decreased ($p < .05$), respectively, with training, and were unaffected by -blockade. Hepatic mitochondrial MDH and ALT activities increased (+38% and 37%, respectively, $p < .01$) with training in TC, but the training adaptation was not observed in TP and TA. Skeletalmuscle and hepatic -glycerophosphate dehydrogenase activities are not affected by either training or -blockage.

317. NEGRAO, C.E. Metabolic consequences of D- and L-carnitine administration in chronically trained and untrained rats. Ph.D. in Physical Education, 1985, 214 p. (F.J. Nagle).

The effect of L-carnitine supplementation and depletion on carnitine derivatives and enzymes in blood plasma, heart, skeletal muscle and liver of trained and untrained rats was studied. 74 male rats were randomly divided into 15 groups according to exercise training, carnitine treatment and physical activity prior to sacrifice. Isotonic sale (1.0 ml) was injected i.p. 5 times/wk in the control groups, whereas 750 mg/kg of D- or L-carnitine was injected in the treatment groups. The exercise groups were exercised on treadmill for 60 min, 5 times/wk for 8 wks at 26.8m/min and 15% grade. 8 wks of L-carnitine administration sig increases the concentration of free carnitine in blood plasma and all tissues, whereas D-carnitine sig decreases it. Exercise training prevents the rate of free carnitine depletion in heart and skeletal muscle found in untrained rats. The normal concentration of L-carnitine seems to be sufficient for the physiological stress imposed by exercise. However, insufficiency of L-carnitine inhibits the training adaptation in fatty acid oxidation in heart and skeletal muscle.

318. PAINTER, P.L Cardiovascular responses to exercise following renal transplantation. Ph.D. in Physical Education, 1985, 186 p. (P. Hanson).

This study was designed to fulfill 3 objectives: to establish the diffs in exercise capacity between patients with ESRD treated with hemodialysis and transplantation; to determine the role of left ventricular performance in the limitation of VO_2 max in hemodialysis patients; and to evaluate the sympathetic nervous system responses to exercise in hemodialysis and transplant patients. A cross sectional group of 21 hemodialysis patients and 20 transplant recipients completed max

treadmill exercise tests with measurement of VO_2. VO_2 max was sig greater in the transplant group. 20 hemodialysis patients scheduled for living related renal transplantation were tested before and after (average 8.5 wks) transplant. VO_2 max and max HR increased sig following the transplant (average increase of 28%) without exercise training intervention. All transplant patients (both cross-sectional and longtidudial) had sig higher max HRs. The results of this study indicate the levels of VO_2 max are sig higher following renal transplantation. This is, in part, a result of increased oxygen transport capacity due to increases in both oxygen content and max cardiac output. The changes in max cardiac output were the result of increased max HR. The low max HRs in the hemodialysis may be a manifestation of adrenergic dysfunction, as evidenced by high prevailing levels of norepinephrine at rest with minimal responses to the sympathetic stress of submax exercise. The removal of the uremic state with successful transplantation may correct the adrenergic dysfunction and result in appropriate chronotropic responses, and higher max cardiac output and systemic oxygen transport.

319. PATTERSON, P. An investigation of the dependability of criterion-referenced test score using generalizability theory. Ph.D. in Physical Education, 1985, 139 p. (M.J. Safrit).

The purpose of this study was to explore the dependability of criterion-referenced test scores using criterion-referenced generalizability theory. This was done via computer simulation under varying conditions of sample size, distribution shape, and cutoff score. Empirical data were also examined under varying conditions of sample size, trial standard, and cutoff score. The dependability indices, $\bar{\Phi}$ and $\Phi(\lambda)$, and the associated error variance, $\sigma^2(\Delta)$ were compared using the criterial of bias and consistency as outlined by Hays (1973). 2 populations, normal and negatively skewed, were simulated, each with 4000 cases. 10 trials were generated for each case to simulate a 10 trial test. Samples of size 30, 90, and 180 were randomly drawn from each population with 30 replicates of each sample size in order to form the sample distributions used to examine bias and consistency. The empirical data consisted of 551 first ball bowling scores from which sample sizes of 30, 90, and 180 were randomly selected in the same manner as the simulated data. The resultant sampling distributions were examined for bias and consistency. Results indicated that the amount of bias, size of the standard errors, and the small

values obtained for $\hat{\Phi}$ with both the simulated and empirical data suggest it has limited viability as a dependability index. The amount of bias and size of the standard error were acceptable for $\hat{\Phi}(\lambda)$ but both increased for values $\hat{\Phi}(\lambda)$ at cutoff scores near the M. Thus the cutoff score must be selected with the M of the distribution in mind. In addition, the size of the standard errors for $\hat{\Phi}$ and for $\hat{\Phi}(\lambda)$ at cutoff scores near the M indicated that sample sizes approaching 90 are necessary. Finally, the low values for $\hat{\Phi}$ and $\hat{\Phi}(\lambda)$ at selected cutoff scores indicated that greater than 10 trials are necessary to obtain dependable results.

320. WARD, A. The effect of body position on hemodynamics during rest and exercise in normotensive subjects and borderline hypertensive patients. Ph.D. in Physical Education, 1985, 165 p. (F.J. Nagle)

Hemodynamic responses during supine and sitting rest and exercise were compared in 10 normotensive Ss (NT) and 9 borderline hypertensive patients (BH) to determine if the reflex sensitivity of cardiopulmonary baroreceptors was augmented in BH patients. Oxygen consumption, HR, BP, cardiac index, total peripheral resistance index, forearm blood flow, and forearm vascular resistance were evaluated during rest, isometric handgrip, and at 20%, 40%, and 60% of max bicycle exercise capacity in the supine and sitting positions. Carotid baroreflex sensitivity was evaluated in the supine and 70 degree headup tilt position by graded neck suction. Carotid baroreflex sensitivity was not attenuated in the BH Ss in either position. Blood pressure and total peripheral resistance index were sig greater in the BH patients compared to the NT Ss during rest, isometric handgrip and bicycle exercise in both positions. However, the diffs between the 2 positions for these variables were similar in the 2 groups. Cardiac index, oxygen consumption, forearm blood flow, and forearm vascular resistance responses were not diff between groups in either position. Thus, the circulatory adaptation to exercise in diff body positions was similar in the 2 groups, and no evidence of an augmented cardiopulmonary baroreflex during exercise was apparent in this study.

321. AHLQUIST, L.E. The effect of freeze-drying/fiber dissection technique on kinetic properties of dog skeletal muscle glycogen synthase. M.S. in Physical Education, 1985, 139 p. (R.G. Kochan)

The purpose of this study was to determine if a freeze-

drying/fiber dissection technique is a valid method to use when analyzing glycogen synthase. Kinetic properties (Total Activity, $V_S max$, $V_A max$, $S_{0.5}$, $A_{0.5}$, and Fractional Velocity) of both a "low" active and "high" active glycogen synthase enzyme were studied in order to determine if enzyme changes occurred during this technique. The "high" active group consisted of muscle samples obtained from 14 fasted and 3.5 hour treadmill exercised (glycogen depleted) male dogs. The "low" active group consisted of muscle samples obtained from 16 well-fed non-exercised (normal glycogen levels) male dogs. A portion of each sample was homogenized prior to freeze-drying and post freeze-drying after 0,2,4,6, and 8 hours in a dry box (temperature 23-26°C, humidity less than 14%), and assayed for glycogen synthase activity and glycogen and protein content. A T-test was used to determine if the freeze-dried samples at 0,2,4,6, and 8 hours and the original non-freeze-dried samples diff. In the "low" activity group total activity, V_S max and V_A max increased sig ($p < .05$) with freeze-drying, $S_{0.5}$ and fractional velocity decreased sig ($p < .05$) and $A_{0.5}$ did not change. In the "high" active group $A_{0.5}$ and fractional velocity increased sig (pxo.5) while $S_{0.5}$ did not change. The kinetic properties did not diff between 0,2,4,6, and 8 hours in the dry box. This study showed that the kinetic properties of glycogen synthase do change using this freeze-drying portion of the technique and not due to the environment of the dry box. These findings clearly indicate that the kinetic properties of glycogen synthase determined from muscles samples that have undergone this technique may not reflect the kinetic properties of the non-freeze-dried tissue.

322. BARRENT, R.J. Effects of an off-season conditioning program on physical, physiological, and performance characteristics of college football players. M.S. in Physical Education, 1985, 57 p. (F.J. Nagle)

The purpose of this study was to evaluate the effectiveness of an off-season conditioning program for college football players. The Ss were 16 scholarship football players at the University of Wisconsin-Madison in the Winter of 1985. Each S was evaluated on the following tests before 7 weeks of training: agility (25 yd shuttle run), body composition (% fat), cardiovascular endurance (max VO_2), flexibility (sit and reach), hand grip strength (dynamometer Kg), lower body strength (Cybex II), power (vertical jump), resting heart rate (ECG), speed (40 yd dash), and upper body strength (max bench press). After training the same factors were again evaluated.

Statistical analysis of the data included calculation of the Ms, SDs, ranges and paired t-tests. The paired T-test sig level was established at the .005 level. Sig improvement occurred in shuttle run time, max VO_2 uptake, sit and reach, lower and upper body strength, and vertical jump. Percent body fat was sig decreased. Only hand grip strength and 40 yd dash time failed to change from before training. It was concluded that an off-season conditioning program for college football players was strongly associated with improvement in performance attributes: agility, cardiovascular endurance, flexibility, lower body strength, power and upper body strength. The training was also associated with a reduction in body fat and a reduction in resting HR.

323. DARR, K.C. Aging effects of recovery heart rate following maximal exercise in man. M.S. in Physical Education, 1985, 74 p. (R.G. Kochan)

It is generally believed that in older individuals, HR and BP recovery is prolonged following exercise, however, it is uncertain whether this is due to an aging effect on the cardiovascular system or due to other factors affecting the recovery process. To control for these factors (physical fitness, work intensity, and autonomic dysfunction) 25 male Ss were exercised on a bicycle ergometer at the same relative intensity (max) and categorized for comparison according to age and fitness levels. Autonomic function testing, using the Valsalva maneuver, preceded exercise. Linear regression analysis (change in log HR over change in time) of the initial post-exercise heart rate (HR) showed the recovery rate to be sig faster ($p = .002$) in the highly trained younger Ss (age 24$\pm$ 2 yrs, VO_2 max 63$\pm$ m./kg/min). No other sig diffs in HR or systolic BP recovery time were found among high fit or less fit Ss. The faster rate of recovery in the older Ss may be due to an age related decrease in cardiac muscle distensibility resulting in a decrease stretch receptor response to venous return.

324. FINCH, L.D. Reproducibility of the resting metabolic rate. M.S. in Physical Education, 1985, 59 p. (F.J. Nagle)

There is little information on the day-to-day reproducibility of metabolic rate (RMR) measurements. This investigation tested the reproducibility of an open-circuit system in 27 post-absorptive Ss (14 male and 13 female, M age 26.7$\pm$ 6.0 and

25.4+ 7.5 years respectively). Ss reported to the laboratory at 6:00 or 7:00 am. Following 30 min of supine rest, three 3-min collections of expired air were taken in 30-liter neoprene balloons on 3 consecutive days. In 5 Ss expired air was collected directly in a 120-liter Tissot spirometer, in addition to bag collections for comparison of collection systems. Carbon dioxide and oxygen were analyzed using Godart Capnograph and Beckman E_2 analyzers respectively. ANOVA revealed no sig diffs among the M RMR on 3 consecutive days ($F=3.22$ for females and 4.53 for males). M coefficients of variation (CV) were 7.6% and 12% for males and females respectively. Comparison of Tissot and bag measurements revealed no sig diff in M RMR ($p>.05$). We concluded that: repeated trials over 3 days showed no pattern of high to low metabolism measurements. Within a group of Ss repeated trials on several days do not appear to be warranted; a bag collection procedure is at least as accurate as other open to closed circuit methods for measuring resting metabolism; and greater variability of measurement in females (CV of 12.0% vs 7.6%) tends to confirm previous work in which variability in rest measurement was attributed to menstrual cycle changes.

325. NELSON WOREL, J.E. Benefits of exercise training during hemodialysis for chronic renal failure patients. M.S. in Physical Education, 1985, 82 p. (F.J. Nagle)

14 maintenance hemodialysis patients volunteered to participate in a 24 wk program of exercise training during hemodialysis. The exercise was performed on a stationary bicycle during each dialysis treatment. 7 maintenance hemodialysis patients served as Controls. All Ss performed treadmill exercise tests pre, and following 12 and 24 wks of exercise training. Exercise tolerance, measured directly by max oxygen consumption (ml/kg/min) increased sig by 23% over the 24 wks of training. Max treadmill vertical power output (Kgm/min) also increased sig in the exercise group. HR at a submax exercise level (3 METS) decreased sig in the exercise group. No change in submax exercise HR was seen in the control group. 4 out of 8 hypertensive patients in the exercise group decreased or discontinued antihypertensive medications. Exercising patients reported subjective benefits including less cramping during or after dialysis, fewer hypotensive episodes during dialysis, and the ability to be more active in their occupational and leisure activities. Exercise during dialysis is technically feasible, is safe for appropriately screened patients, and will improve exercise tolerance. Exercise during dialysis may also improve

compliance to regular exercise, as well as providing a convenient, supervised exercise setting for the hemodialysis population.

326. SKUBAL, S.J. A comparison of a submaximal step test and treadmill test for assessing exercise tolerance and cardiovascular adaptions. M.S. in Physical Education, 1985. (F.J. Nagle)

A simple, submax field test for assessing fitness in large populations remains a critical need. Using progressive treadmill walk protocols as standard criterion measures, 2 step protocols (20 and 30 steps/min), were designed to match oxygen uptake(VO_2) requirements of two treadmill protocols (2 and 3 mph). This study sought to evaluate: the matching of VO_2 and CV responses; the accuracy of heart rate (HR) aerobic power predictions to a rate of 150 bpm (measure of exercise tolerance); and reproducibility of each test. 26 normal adults (M age 40.7 $\pm$ 15.2 years), 15 females and 11 males participated. Ss performed 2 trials of a continuous progressive step test and treadmill protocol for 2 mins each at 0, 10, 20, 30, and 40 cm heights; and 0, 5, 10, 15, and 20% grades respectively. Ss under 40 performed the faster tests (n=12) and Ss over 50 years the slower tests (n=14). VO_2, HR, systolic and diastolic pressure (SP, DP), and rating of perceived exertion (RPE) were determined in the second min of each workload. Repeated measures ANOVAS revealed no sig diffs in VO_2, HR, SP, DP, or RPE between step and treadmill protocols (p .05). There was no sig diff between the 2 protocols in predicting aerobic power at a HR of 150 bpm. Also no sig diffs were found between trial 1 and trial 2 of the tests. For populations, short (6-10 min) progressive step protocols may be used effectively to assess the CV adaptation to exercise and provide an estimate of exercise tolerance.

UNIVERSITY OF WYOMING
LARAMIE, WYOMING

327. FAHLESON, G.A. Imagery orientation effects associated with students' cognitions during instruction of a novel jai alai-like skill. Ph.D. Educational Foundations, 1985, 153 p. (D.C. Griffey)

This study investigated the effects of teaching acts on the thoughts and performance of ELE students when learning a novel skill. Prior to administration of the instructional treatments, students' imagery ability (kinesthetic or visual),

anxiety, and skill ability were assessed. Structured lessons were scripted and presented using cues that prompted students to think about their performance in either visual or kinesthetic ways. All students received both of the designed instructional treatments. Students were debriefed following instruction using a stimulated-recall procedure. This investigation assessed the main effects of aptitudes and treatments (designed and perceived), assessed aptitude X treatment interactions, and examined students' cognitive process. There was sig ($p < .05$) perceived treatment X initial ability interaction. Perceived kinesthetic instruction was associated with higher posttest scores for persons scoring low on the pretest and visual instruction was associated with higher posttest scores for highly skilled Ss. Those students who reported remembering, using, and finding the instruction helpful were the poor performers, but they rated their performance high. The results of this study show that effective cues are vivid and image evoking, and students have preferred ways of imaging movement that are the result of metacognitive decisions rather than designed instruction.

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
BLACKSBURG, VIRGINIA (M. Driscoll)

328. BATTLE, R.A. Comparison of total and high-density lipoprotein in cholesterol in male recreational swimmers and sedentary controls. M.S. in Education, 1985, 78 p. (J. Walberg)

TC and HDL-C ratios were compared in 30 adult male rec swimmers and 21 sedentary controls. % of body fat, # of cigarettes smoked daily, and daily alcohol consumption were assessed for both groups. Max workout HR, wk swim duration and wk swim distance of the swimmers were also measures. Max workout HR (M + S.D.) was 140+ 24 beats per min. M wk swim duration was 140+ 24 beats per min. M wk swim duration was 140 + 84 min and M wk swim distance was 5317 + 3217 yrds. Swimmers and controls were non sig diff in age, number of cigarettes smoked daily, and % of body fat. In this sample, the swimmers consumed sig higher levels of alcohol than non-swimmers. TC and HDL-C concentrations of swimmers were not sig diff than controls. (204 vs 199 mg/dl, and 48 vs 47 mg/dl). TC/HDL-C ratio of swimmers was 4.69, while that of controls was 4.65. This study showed that adult male rec swimmers who train at low intensity do not differ sig in total and HDL-C or TC/HDL-C ratio from male sedentary controls.

329. CLARKE, D.A. An analysis of lawsuits based on student injuries in public school physical education and athletic programs in the United States from 1980 to 1984. M.S. in Education, 1985, 131 p. (M.L. Driscoll).

The student located, examined, classified and analyzed lawsuits based on student injuries due to alleged negligence in public school PE and athletic programs. The analysis of cases revealed 21 sport-injury lawsuits in PE and 24 in athletic programs. 21 lawsuits involving playground or other injuries were also examined. Each case was classified and discussed according to the primary area of alleged negligence. 23 cases were ruled in favor of the plaintiff, with 15 held for the defendant. The doctrine of governmental immunity was upheld in 28 cases. The study concluded that: professionals in the field should become familiar with the laws of the state; school districts and individual departments should develop and utilize a professionally sound curriculum; teachers and coaches should always ensure adequate instruction; schools should employ an established supervisory plan for all activities; it is the responsibility of school districts to provide for proper maintenance and repair of all facilities and equipment; all glass in and around physical activity areas should be of safety glass; school individuals must be cognizant at all times of the security of all facilities and equipment; all injuries should be reported to the proper authority on the day of the accident.

330. LIEBAU, R.E. The effects of weightlifting modality and loading on peak and immediate post systolic and diastolic blood pressure. M.S. in Education, 1985, 98 p. (D.R. Sebolt)

Ss 13 male students (18-34 years). Ss were studied to determine their BP responses to 2 wt lifting movements. Stat sig was found for all conditions of systolic BP and for peak diastolic BP. It was concluded that systolic BP response is positively affected by both the mode of exercise and the loading of the exercise

331. LYNCH, C.S. Factors involved with successful weight loss maintenance. M.S. in Education, 1985, 95 p. (J. Walberg)

Ss 19 overweight females who had participated in a nutrition and exercise program were studied to determine factors associ-

ated with wt loss maintenance. 2 groups of Ss were contacted and interviewed. Group 1 (n=11) participants in a 6 wk treatment program consisting of 530 kcal liquid diet, and a supervised exercise program corresponding to 60% VO_2 max for 30-40 min, 3 times/wk. Group 2 (n=8) consisted of 8 wk treatment program of 12-1500 kcal/day, and a supervised exercise program corresponding to 70% VO_2 for 30-40 min. Group 1 was a 12 mo post formal treatment and group 2 6 mo. A questionnaire was administered to the Ss. Of the factors examined, 4 were found to be prevalent for both groups: skipping breakfast and a strong appetite in the evening showed higher average wt gains, preplanning meals and higher self-motivation levels produced a lower average wt gain. Group 1 showed lower average wt gains for those individuals who joined another program and ate 3 meals a day. Group 2 showed individuals who had higher activity levels had lower average weight gains. Due to the low incidence of maintenance of wt loss, it appears necessary to emphasize maintenance strategies during treatment sessions.

332. RIORDAN, M. The effect of caffeine on short intense exercise. M.S. in Education, 1985, 90 p. (J. Walberg)

The effects of caffeine on the performance of 50 max repetitions of knee extensions and flexion, by male bicyclists 18-32 yrs at 300°/sec on the Cybex II isokinetic loading device was investigated. Each S completed 2 trials under treatment conditions of decaffeinated coffee (3 mg caffeine) and decaffeinated coffee with the addition of 500 mg of caffeine powder. 24 hrs at minimal separated each trial. Tests were administered in random order and in blind fashion. A non sig increase in work, endurance ratio and AVP was evident in the caffeinated trial. Peak torque and TEA varied greatly in both trials, the ANOVA indicated no stat diff existed in any parameter of muscular function measured. A sig diff existed between extension and flexion for all parameter of muscular function measured. Quadriceps were the dominate muscle group with the ratio of flexion to extension 60% in work and AVP and 45% and 80% in TAE and endurance ratio respectively. It was concluded that caffeine has no effect on extension and flexion at 300°/sec on the Cybex II and the quadriceps were the dominant muscle group.

333. ROBERTS, S. Exercise leader interaction analysis of ACSM rehabilitative exercise specialist candidates. M.S. in Education, 1985, 137 p. (M.W. Metzler & W.G. Herbert)

20 Ss were audio and video taped during their exercise leadership examination. The tapes were used to code the interactions that occurred between the exercise leaders and the participants in the simulated cardiac rehabilitation exercise session using an interaction analysis system developed specifically for this physical activity setting group. The tapes were coded using the Datamyte 801 Observational Recorder. Frequencies were converted into rates of interaction ($f*min^{-1}$) for comparison. The M rates of interaction were low for the phases and overall (warm-up = .38/min; stimulus = .59/min; cool-down = .29/min; total = .46/ min). The individual Ss rates of interaction were all less than 1 interaction per min/T-test across category facets between phases showed the instruction and explanation facets in the warm-up phase diff sig from the same facets in the stimulus phase. Compliance facet diff sig in the stimulus phase from the compliance facet in the other 2 phases monitor facet in the stimulus phase diff sig from the monitor facet in the cool-down phase. There was no sig diff across facets between the warm-up and cool-down phases. The low rates of interaction suggest that the exercise leaders may have been reactive to the specific examination situation in which these data were collected.

334. SCHROEDER, K.K. Factors influencing selected male students' condom usage. M.S. in Education, 1985, 79 p. (C.R. Baffi)

An assessment of male college student' use of condoms, reasons for using condoms, their attitudes toward sexuality and their attitudes toward condoms. Ss 305 completed a questionnaire consisting of informational items (assessing class standing, marital status, reasons for using condoms, number of recent sexual partners, and intention to use condoms), the Sexual Opinion Survey and the Attitude Toward Condoms Scale. The scores on the Attitude Toward Condoms Scale ranged from extremely negative to extremely positive, but the M was close to the middle of the scale. The item r between the Attitude Toward Condoms Scale and the Sexual Opinion Survey was calculated to be .07 or no r. This implies there is no relationship between attitude toward sexuality and attitude toward condoms. A mild neg r (-.42) was noted between the

Attitude Toward Condoms Scale and the item that stated "If you have intercourse in the next month, do you intend to use condoms?" The findings of the study suggest that: few males use condoms to prevent the transmission of sexually transmitted disease; 72% of those surveyed had used a condom at some time; though men may not think condoms are pleasant to use, they believe they are a reliable form of contraception and many are willing to use them; condoms were used to prevent impregnating a sex partner.

335. SMITH, JR., C.A. Strategic planning utilized in Atlantic Coast Conference intercollegiate athletics. Ed.D. Administration, 1985, 142 p. (M.L. Driscoll)

The 8 member institutions of the ACC were studied to determine if strategic planning was being employed. A written survey of all 8 institutions and a personal interview with the administrators of 5 of the member institutions was conducted. Areas examined were: formal plans, macroenvironmental factors, target markets, pricing techniques and management information systems. Data were analyzed using STAT PAC by Walconik Inc. and reported through the use of descriptive statistics consisting of frequency and %. The study revealed that the administrators of the ACC had the necessary tools to develop strategic plans but were not committed to developing any long range plans. Marketing tactics necessary for strategic planning are not perfected and the administrators had not acquired the necessary information to develop strategic plans for their organizations.

336. SULLIVAN, J. Efficacy of a modified chair test designed to assess exercise tolerance of the low-fit elderly. M.S. in Education, 1985, 95 p. (W.G. Herbert)

12 physically inactive young women (19-22 years) completed randomly ordered exp test to determine the diff, if any, between responses to 3 graded exercise protocols -- the Balke treadmill test (2-mph), the Smith-Gilligan chair step test, and a modified version of the Smith-Gilligan chair step test. Measurements of HR, O_2 consumption BP were made during each stage within the 3 tests. ANOVA revealed no sig ($p < .05$) diff between HR, O_2 consumption, BP at metabolically equivalent stages between the 3 protocols. These data indicated that the modified chair step test elicited metabolic demands and hemodynamic response patterns similar to those obtained with a BALKE test that is widely accepted in the clinical field as

appropriate for testing low-moderate functional capacity adults. Incremental states of the modified Smith-Gilligan test that required metabolic demands beyond those for the highest level of the Smith-Gilligan test, were found to elicit VO_2, HR and BP responses comparable to those available in the Balke treadmill test. Thus, the modified version might be used to evaluate the exercise tolerance of elderly Ss with broader range of functional capacities (< 4.5 METs) as compared to the standard version of the chair test (< 3.2 METs).

337. VEJARANO, M.E. Effects of a non-steroidal, anti-inflammatory drug (Indocin) in selected muscular function parameters after concentric and eccentric work. M.S. in Education, 1985, 147 p. (R. Bos)

The effects of Indocin on muscular performance, as evaluated on the Cybex II isokinetic dynamometer, following prolonged concentric and eccentric work, were evaluated in 48 Ss who were randomly assigned to 1 of 4 drug groups. Ss performed 30 min step test during which 1 limb led the stepping movement throughout and the contralateral limb trailed throughout. The muscular performance parameters of PT, TAE and AVP evaluated at slow and high velocities, and the ROM at the knee joint were assessed prior to the step test and at 5 intervals thereafter. A non sig decrease in PT and TAE at the contraction speed of 60^{o}/sec were present in the eccentric limbs, greater reductions evidenced in the placebo group. Non sig changes occurred in the concentric limbs. Non sig changes in ROM and in muscular function parameters evaluated at 250^{o}/sec were observed.

338. WARD, L.J. Incidence and implications of atypical exercise blood pressure responses of cardiac rehabilitation patients. M.S. in Education, 1985, 151 p. (W.G. Herbert)

116 cardiac rehabilitation patients were grouped according to their BP responses to exercise. BP groupings were S_TD_T; S_TD_AT; and $S_{AT}D_{AT}$. Groups were investigated for incidence of atypical responses and diff in physical characteristics, CVD status, predisposing CHD variables, medications prescribed, peak exercise cardiovascular responses and indicators of myocardial dysfunction. Results revealed atypical BP responses in 65.5% of the Ss. No change in systolic pressure between the last 2 measured BP was the most frequent atypical response exhibited. The $S_{AT}D_{AT}$ pattern group was suggested to be higher health risk than the other groups based upon the tendency for higher % of

Ss in this group exhibiting a history of myocardial infarction (80%), CABG (20%), angina (40%) and hypertension (47%). A high % of these Ss had been prescribed antihypertensive and antiarrhythmic medications, had "borderline" resting hypertension (M + 135./86.3 mmHg) and smoked (61.5%). Peak exercise data revealed a higher HR, higher systolic and diastolic pressures, higher RPE, more marked decreases in ECG changes and more supraventricular and ventricular arrhythmias than the other groups. These results suggest that cardiac rehabilitation Ss with a combination of an atypical systolic and diastolic BP response to exercise may require increased medical supervision during testing.

339. WILLIAMS, A.B. Incidence and implications of atypical exercise blood pressure responses in adults without diagnosed coronary heart disease. M.S. in Education, 1985, 152 p. (W.G. Herbert)

161 Ss without CHD were grouped according to their SBP and DBP changes between the final 2 stages of exercises: S_{AT} = SBP $<$ 4, no change $>$ + 4, or $\geq$ 30 mmHg; D_{AT} = DBP $\geq$ 10 or above 110 mmHG; S_T = those SBP not categorized as S_{AT}; $\overline{DT}$ = response not defined as D_{AT}. The groups did not diff physically, in health status, or in prescribed cardiovascular modifying medications. In predisposing CHD risk factors, the groups did not diff in supine SBP, relative wt, or any plasma lipids. The S_TD_{AT} responders tended to have higher supine DBP. At peak exercise, the groups did not diff in functional capacity, HR, endpoint symptoms, RPE, baseline ECG, ECG changes, arrhythmias, or intraventricular heart blocks. None of the groups were associated with excessively high or reduced BP, ECG abnormalities, or arrhythmias at peak exercise. The results suggest that physician-referred, asymptomatic adults without diagnosed CHD entering medically supervised exercise programs may require minimal supervision during exercise testing, even in the presence of CHD risk factors of atypical exercise BP response.

WASHINGTON STATE UNIVERSITY (K. DePauw)
PULLMAN, WASHINGTON

340. EGELER, D.J. Indoor soccer: The Americanization of soccer. M.S. in Physical Education, 1985, 161 p. (G. Hulac)

Soccer, rugby, and rounders were all present in the United States before the development of the major American sports of

baseball and football. Rugby and rounders evolved into football and baseball while, until recently, soccer has remained virtually unchanged. The purpose of this study was to: identify and analyze the relationship between the American social processes and factors that have influenced the evolution of football and baseball and the current development of soccer; analyze the possibility of indoor soccer being the Americanization of traditional outdoor soccer; and forecast a possible future for indoor soccer in the United States. A review of the literature of sport sociology and a review of the history of each sport identified the American social processes and factors that influenced the development of baseball, football, and soccer. The conclusion of the study was that indoor soccer was the Americanization of the traditional game of outdoor soccer and indoor soccer could possibly develop into another major American sport.

341. EGELER, K.M. An examination of physical education curricula in California, Oregon and Washington. M.S. in Physical Education, 1985, 131 p. (M.A. Bayless)

A study to provide an initial data base identifying sig characteristics of physical ed in Christian schools. Principals from 89 Christian schools completed a mail questionnaire concerning the physical ed curriculum, the intramural program and the interscholastic athletic program. The population included all K-12 schools, located in Washington, Oregon, and California, listed in the 1984 International Membership Directory of the Association of Christian Schools International (ACSI). The analysis utilized the descriptive statistics of frequencies and percentages. Selected questions were subjected to a chi-square analysis. Results indicated that 91% of the schools had a physical ed program, 78% of the schools indicated a scriptural basis for the program, and 69% did not have a physical ed curriculum. 69% of the schools lacked full-time physical ed teachers, and 17% indicated that the full-time teachers were state certified. 77% and 71% considered interscholastic athletics and intramurals, respectively, as part of physical ed. 36% had intramurals and 66% had interscholastic athletics. The chi-square analysis showed that schools having interscholastic athletics were more likely to have intramurals than those not having athletics; $p < .05$.

342. ELMORE, M.W. Investigation of high school athletes' perceptions of ideal coaching personalities. M.S. in Physical Education, 1985, 68 p. (G. DeMers)

An investigation of how sport, gender, and class affected athletes' perceptions of a distinct collection of personality traits which comprised their ideal coach was undertaken. 402 HS athletes, ages 15 to 18 yrs participating in baseball, softball, golf, and track and field were utilized as Ss. Each S completed a Personal Information Questionnaire (PIG) and the Cattell 16PF Profile Form. The dependent variable was the athletes' perceptions of ideal coaching personalities. Data were collected over a 4 wk period at 5 Eastern-Southeastern Washington State Class A-AA HS during the Spring of 1985. A Randomized Complete Block design with a 3 way 4 x 2 x 2 ANOVA was utilized to determine diffs between the Ss responses based upon their sport, gender, and class. A LSD Test was employed for multiple comparisons. A distinct collection of "ideal" coach personality traits was observed. Diffs in the athletes' perceptions were not observed when compared by sport ($p < .05$) but were observed when compared by gender and class ($p < .05$) Sig diffs were observed leading to the conclusion that sport, gender, and class affect ahtletes' perceptions of an ideal coaching personality.

343. QUINTINSKIE, J.J. Jr. The metabolic significance of the increased skeletal muscle mitochondria that accompanies endurance training. Ph.D. in Exercise Physiology, 1985, 67 p. (P.D. Gollnick)

The kinetic characteristics of mitochondria isolated from rat skeletal muscle were examined. Mitochondrial oxygen uptake was measured as a function of varying mitochondrial protein and substrate concentration. Increases in mitochondrial concentration increases their sensitivity to changes in substrate according to Henri-Michaelis-Menten kinetics, via the increased probability of a substrate-mitochondrion encounter and the more rapid translocation of ADP into the mitochondria. This process would result in tighter control of the glycolytic pathway and favor fat metabolism during exercise. Therefore, the sig of the increased mitochondrial concentration is a shift away from carbohydrate metabolism toward fat metabolism and could explain many of the changes known to occur during exercise after endurance training.

344. UEBEL, R. The effect of varied weighted implements on the kinematics of the shot put. M.S. in Physical Education, 1985. 65 p.

6 subjects, ranging in age from 18 to 36, were divided into a high, medium, and low proficiency group. Each s was throwing shots of 39.2 N, 53.4 N, 62.3 N, 71.2 N, 80.1 N, 89N, and 102.3 N in random order. 1 trial per wt was filmed with high speed cinematography at 200 fps. The throwing motion was divided into 3 phases according to leg support, with the third phase also divided into 4 equal segments. The dependent variables investigated were the duration, the path of the shot, velocity and acceleration, angle and height at release, potential and kinetic energy at release, and distance of the throw. Sig diffs were found for the absolute values of the spatial variables between the 102.3 N implement and the 39.2 N and 53.4 N implements. No diffs were found for the absolute values of the kinematic variables for the wts ranging from 62.3 N to 89 N. The relative values of all variables were not sig diff. Varied weighted implements ranging from 62.3 N to 89 N had no effect on the kinematics of the glide technique of the shot put.

345. VAN UDEN, J.A. Effect of endurance training with added weight on maximal oxygen uptake and resting heart rate. M.S. in Physical Education, 1985, 53 p.

For average runners, running speed limits fitness. Could fitness be improved by training with added weight (AW) without changing running speed? 22 male students (21.1 + 2.4 years) were matched on initial estimated VO_2 max (42.5 $\pm$ 3.2 $ml.kg^{-1}min^{-1}$ and randomly assigned to experimental or control groups. Training consisted of 25 min of running, 3 days/wk for 10 wks. Running speed represented 70% of initial max training HR. Experimental Ss carried 10% of body wt in backpacks for the last 7 wks. Estimated VO_2 max tests were conducted on a cycle ergometer, using the Astrand-Ryhming nomogram, before and after 3, 6, and 10 wks of training. Average resting HRs were recorded the wk preceding each ergometry test. ANOVA for repeated measures revealed sig improved VO_2 max for both groups to sk 3; for the experimental group only, to wk 6; and a sig diff between the groups at wk 10. Resting HR decrements were sig to wk 3 and then to wk 10 for experimental group, and to wk 6 and 10 only, for controls. Diffs between groups were not sig. Training with 10% AW increased VO_2 max and rate of resting HR decline.

WAYNE STATE UNIVERSITY (J. Wirth)
DETROIT, MICHIGAN

346. MAKULSKI, C.A. A physiological and anthropometric profile of college level oarsmen. M.A. in Exercise Physiology, 1985, (J.C. Wirth)

21 male members (22.1 + 2.9 yrs; 185.3 + 5.7 cm; 81.8 + 5.8 kg) of the Wayne State University crew team (1983-84) were progressively exercised to voluntary exhaustion on a treadmill to obtain VO_2 max. 19 of the 21 Ss were hydrostatically weighed with simultaneous measurement of RV to determine % body fat. Reliability was obtained by repeated stress tests on 11 Ss and hydrostatic weighings (3) on 19 Ss. A Pearson product-moment correlation, paired t-test, and ANOVA assessed the reliability of test-retest data. There were no sig diffs ($p > .05$) between repeated stress tests, hydrostatic weightings, or RV. The college level oarsmen in this research obtained a M VO_2 max of 4.7 + 0.6 L/min or 58.3 + 7.5 ml/kg. min, with a corresponding HR of 185.8 + 6.2 b/min. Body density was 1.06 + 0.1 g/cc, with a RV of 1.6 + 0.6 L. The % fat was 14.4 + 2.8%, with FW measuring 11.7 + 2.2 kg and LBM measuring 70.1 + 6.1 kg. The max O_2 transport of this athlete's LBM was 67.9 + 7.8 ml/kg. min. This group of oarsmen have a higher VO_2 max than college level oarsmen tested prior to 1970, while more recent research presents the same or higher values. National level oarsmen tend to have higher VO_2 max values. A higher % body fat was found in this research than previously reported on oarsmen. VO_2 max ml/kg. min LBM was comparable to other research. These findings suggest the fitness levels of oarsmen tend to vary due to levels of competition, training methods, and improvements in training methods.

347. SPRAGGS-SMOUTER, J.S. Effect of aerobic conditioning on relative fat patterning. M.Ed. in Physical Education (Exercise Physiology), 1985, 113 p. (J.C. Wirth)

32 female nurses from Detroit, MI hospitals (M age = 31 years) were randomly selected to participate in either an inactive control group (n=9) or an aerobically conditioned experimental group (n=23) in order to assess the effects of aerobic exercise on body fat and relative fat patterning (RFP). VO_2 max (treadmill), body density (BD) via hydrostatic weighing, and skinfold measurements were determined for all Ss before and

after a 16 wk, 3 day/wk aerobic walk/jog program which averaged 30 min/day at approximately 70% VO_2 max. Relative fat patterning was assessed using principle components analyses of the 7 skinfold variables. From these analyses, 7 RFP factor scores (RFPFS) were computed for both groups in both the pre and post treatment conditions. ANCOVA with pretreatment values as the covariate indicated a sig ($p < .01$) higher post-treatment VO_2 max (ml/kg/body wt/min) for the aerobically conditioned group compared to the control group. Although ANCOVA, again with pretreatment values as the covariates, indicated no sig posttreatment diff between groups in either BD ($p = .06$) or fat weight ($p=.08$), one of the 7 posttreatment skinfolds, abdomen, was sig ($p < .01$) diff. ANCOVA analyses of the RFPFS using pretreatment values and age as covariates indicated no sig (all $p > .10$) diff between the groups in any of the 7 posttreatment factor scores. These results indicated no sig change in RPF as a result of a 16 wk aerobic conditioning program.

WESTERN MICHIGAN UNIVERSITY (M.Dawson)
KALAMAZOO, MICHIGAN

348. Jason-Naegele, E. Physiologic responses to maximal exercise on a treadmill, Monarch bicycle ergometer and Schwinn Air-Dyne ergometer. M.A. in Physical Education, 1985, 53 p. (M.L. Dawson)

This study was conducted to determine which of 3 exercise modes would elicit the highest values for max VO_2 and max HR. Max graded exercise tests were performed by 20 healthy adults, 10 women and 10 men. 5 of the women and 5 of the men were trained and the remaining 10 were untrained. Each S used, in a random order: a motorized treadmill; a Monarch bicycle ergometer; and a Schwinn Air-Dyne ergometer. For each test, Ss were encouraged to complete successively harder workload stages, until they reached volitional exhaustion or localized muscle fatigue. The data indicated that max VO_2 values were sig higher for men compared to women, as well as for trained Ss compared to untrained Ss. For max HR values, no sig diff was found between modes of exercise, gender or level of fitness. It was concluded that any of the 3 exercise modes could be used to elicit similar max HR values. For max VO_2, the treadmill was the mode that elicited the highest values at max exercise, compared to the Monarch bicycle ergometer and the Schwinn Air-Dyne ergometer.

349. KINNE, B.L. A cinematographical analysis of the execution of three types of pitches using the windmill style softball delivery. M.A. in Physical Education, 1985, 119. p. (M.L. Dawson)

The purpose of the study was to identify the specific kinematic and kinetic variables associated with a successful fast ball, drop ball, and rise ball using the windmill style softball delivery. The Ss chosen for the investigation were female pitchers who participated in the Women's National Fast-Pitch Softball Tournament held in Buffalo, NY from August 17, 1984 to August 24, 1984. After analyzing the data obtained from these Ss the investigator concluded that: there is a great deal of variability between the fast ball pitching mechanics of elite windmill style softball pitchers; the success of a drop ball is dependent upon a small degree of hip and shoulder rotation and a large degree of hip and shoulder closure; and the success of a rise ball is dependent upon a large degree of hip and shoulder rotation and a small degree of hip and shoulder closure.

350. MILLS, R.L. Menstrual cycle status, body composition and dietary characteristics of female collegiate gymnasts, dance-majors and non-athletes. M.A. in Physical Education, 1986, 110 p. (M.L. Dawson)

This study investigated the incidence of regular menstrual cycles, secondary amenorrhea and oligomenorrhea in collegiate female gymnasts, dance-majors and non-athletes. Menstrual cycle characteristics and eating attitudes were surveyed by questionnaire. Dietary status was determined by a 5 day dietary diary, and body composition was measured by hydrostatic weighing to determine the relationship of these variables with menstrual cycle status. The frequency of amenorrhea, oligomenorrhea and regular cycles differed significantly between activity groups. The gymnasts reported the highest incidence of amenorrhea (16%) and oligomenorrhea (32%). A sig diff was found between activity groups for age at menarche, % body fat, dietary status and eating attitudes. Statistical analyis of the main effect of menstrual cycle status showed a sig diff for caloric intake and eating attitudes. The amenorrhic Ss consumed fewer calories and scored higher on the EAT compared to the regularly cycling Ss. A sig interaction was found between activity group by menstrual cycle status for caloric intake.

UNIVERSITY OF WISCONSIN (N. Butts)
LA CROSSE, WISCONSIN

351. BENDLE, S.R. The optimal number of repetitions to be used with isokinetic training. M.S. in Adult Fitness-Cardiac Rehabilitation, 1985, 103 p. (K.L. Wood)

16 males & 23 females from the University of Wisconsin-La Crosse & the Cybex Center in La Crosse were randomly assigned to training groups of varying reps: Group 1 - Control; Group 2 - 3x5 reps; Group 3 - 3x10 reps; Group 4 - 3x15 reps; Group 5 - 3x20 reps. All experimental Ss trained with full range isokinetic knee flexions and knee extensions 3/wk for 6 wk at 180 degrees/sec. The control group maintained their normal daily activities. All Ss had their knee flexors and knee extensors pre and post tested on a Cybex II dynamometer at 60, 120, 180, 240 & 300 degrees/sec for measures of peak torque, peak torque to body wt ratios and average power. A 30 rep endurance test at 180 degrees/sec also measured total work and endurance ratios. Groups 2 & 3 sig ($p < .05$) increased in the strength measures while groups 4 & 5 sig ($p < .05$) increased in the endurance. Group 3 increased most consistently in all measures thus isokinetic training appears to be reps specific.

352. BONK, D.J. Self-reported process and impact evaluations of Health-Line: A telephone tape message system. M.S. in Community Health Education. 1984, 55 p. (G.D. Gilmore)

Process and impact evaluations were completed to determine whether or not the Health-Line telephone tape message system in La Crosse, was perceived as a useful source of health information which impacted upon the health behavior of those who used it. Instruments developed to collect data were the Health-Line Community Assessment Survey (HCAS), and the Pharmacist Health-Line Consumer Impact Survey (PHICS). Using the HCAS, telephone interviewers collected data from users of Health-Line (N=389). The researchers used the PHCIS to collect data from La Crosse area pharmacists (N=19). Data were analyzed using the one-sample Kolmogorox-Smirnov Goodness of .it Test, each test expecting uniform distribution. It was found ($p < .05$) persons using Health-Line: repeated information heard on tapes to others; initiated action due to listening to Health-Line tape messages; are satisfied with the tape message selection; reported learning information due to listening to Health-Line tape messages; are satisfied with the tape message

selection; reported learning information due to listening to Health-Line tapes; were not motivated by Health-Line tape messages to seek additional information from a community agency or organization or avoid improper or inaccurate medical treatment. Also pharmacists had heard of Health-Line but that clients had not mentioned that Health-Line motivated them to see a pharmacist or come to a pharmacy. 75% of those persons using Health-Line were female with the largest group being 18-23 yrs of age.

353. BROOKS, C.J. A descriptive class profile of the 1984-85 master degree candidates of the University of Wisconsin-La Crosse adult fitness/cardiac rehabilitation program. M.S. in Adult Fitness-Cardiac Rehabilitation, 1985, (L.K. Hall)

Anthropometrics, skinfolds, hydrostatic weighing, serum cholesterol (HDL and Total), max VO_2 nutritional values, basic diet and perceived lifestyle changes were examined in 15 Ss in July, Oct & Feb. A sig ($p < .05$) increase in max VO_2 occurred between Oct & Feb but no other physiological variable was sig ($p < .05$) altered. Nutritional questionnaire data demonstrated positive behavioral changes in consumption and purchasing of various dietary products indicating an influence brought about through ed exposure and involvement in a health and fitness oriented program. Additionally, 60% of the students indicated that as a result of ed exposure, fitness/wellness have now become a more important way of life.

354. CASTLEMAN, K.S. A comparison of energy expenditures: Running and swimming. M.S. in Adult Fitness/Cardiac Rehabilitation, 1986, 100 p. (N.K. Butts)

Male (n=10) and female (n=9) volunteers, currently using both swimming and running as part of their exercise programs, performed 3 submax run and 3 submax free swim tests at varying speeds. The same data collection procedures were used for both modes of testing. A 1-min gas sample was taken in which the VO_2 value was used to represent the O_2 cost for each test. Caloric expenditures were derived directly from the VO_2 and RQ values. A 1-way ANOVA with repeated measures was the statistical tool employed for both the running and swimming tests for both men and women. Both the men's and women's groups for both modes of tests showed consistent increases in VO_2 as speed increased. Sig ($p < .01$) increases in EE were found between the slow and fast and mid and fast swim speeds with no

sig ($p > .05$) diff in EE noted among the running speeds for the women. The men showed a sig ($p < .05$) diff in EE between the slow and fast swim speeds and sig ($p < .01$) increases in EE between the slow and mid and slow and fast running speeds. For comparative run and swim speed levels, both the men and women expended more energy during swimming for a given distance than for running that same distance. Since similar EE were calculated for various distances and lengths of time at the same run and swim speed levels, it is possible to equate the amount of work accomplished when swimming to that accomplished when running.

355. CIGALA, JR., K.D. The energy cost of walking with and without hand weights while performing rhythmic arm movements. M.S. in Adult Fitness/Cardiac Rehabilitation, 1985, 78 p. (N.K. Butts)

The purpose of this study was to determine the energy cost of walking while performing hand-weighted exercises. 15 active healthy males ($\bar{x}$=48.9 yrs), walked at 3.0 mph performing the following: normal walk (NW), and rhythmic arm movements to the shoulder level of excursion (SLE) and head level of excursion (HLE), with no weight (0-), 1 lb (1-), and 2 lb (2-) hand weights. The 7 exercises were NW, 0-SLE, 1-SLE, 2-SLE, 0-HLE, 1-HLE, and 2-HLE. Following a practice session, the Ss participated in 3 test sessions where the exercises were randomly performed on 3 diff days, with no more than 3 exercises per session. Variables measured were HR, V_E, VO_2, ($l \cdot min^{-1}$, $ml \cdot kg^{-1} \cdot min^{-1}$), METS, RER, RPE general, and RPE arms. A 1 and 2 way ANOVA with a Scheffe post hoc analysis revealed several sig ($p < .05$) diff. The average energy cost for the 6 arm exercises were 3.8, 4.1, 4.5, 4.1, 4.8, and 5.1 METS, respectively. These and the other energy cost values were sig ($p < .05$) higher than NW energy cost, except for 0-SLE. HLE produced sig ($p < .05$) higher energy cost and HR values than SLE. A sig ($p < .05$) greater energy cost was noted for adding 1 and 2 lb weights to the no weight exercise, and a sig ($p < .05$) increase for adding 1 lb to the 1 lb exercise. HR sig ($p < .05$) increased with the addition of 2 lb to the no weight exercise. The RPE values were not greatly diff from each other and accurately reflected increases in exercise intensity at the relatively higher workloads. These findings suggest that the hand-weighted exercises evaluated would assist in reducing body weight because of the increased energy cost when compared to NW.

356. COWAN, J. R. The lakeshore at Terry Andrae State Park: An historical interpretation. M.S. in Parks and Recreation, 1985, 58 p. (K. Wadell)

This study presented an historical interpretation of the lakeshore at Terry Andrae State Park from prehistoric times (pre 1634 A.D.) to the establishment of Terry Andrae State Park in 1929. The following conclusions were made regarding the role of people along the lakeshore: early Indian inhabitants were attracted to the lakeshore as a source of sustenance, specifically to obtain fish from Lake Michigan; European-Americans in the 1800's viewed the lakeshore as a source of industrial wealth in the utilization of fish and fur bearing mammals; early white settlers were attracted to the lakeshore for its fishery resources and developed small family owned fisheries and communities that were dependent on commercial fishing for their existence; escalation of lakeshore land values after WWI was the result of increased demand for recreational land. The park's establishment was the result of the idea that the lakeshore had value as a source of social and psychological well being for the state's populace.

357. DIRKSMEYER, L. J. A survey of the exercise habits of males and females who have been discharged from an alcoholism treatment program. M.S. in Adult Fitness/Cardiac Rehabilitation, 1985, 129 p. (L.K. Hall)

This study was designed to determine if aerobic (AER) or recreational (REC) activity patterns would have an effect upon the length of sobriety (LOS) of post-treatment (P-T) alcoholics. A 60-item questionnaire was used to determine background information such as demographic data, drinking patterns, treatment programs and the LOS of the 91 responding Ss (N=297; x=44 yrs). Pre-, in- and post-treatment AER and REC patterns were also analyzed. There was a sig positive relationship between LOS and Ss' state of employment ($p < .05$), length of time in Alcoholics Anonymous (AA) or Narcotics Anonymous (NA), and length of treatment programs. The no. of times the Ss were involved in treatment showed a sig negative relationship with LOS ($p < .05$). The Ss' AER and REC activities were randomly performed and had no sig relationship to Ss' LOS. It was concluded that random post-treatment AER and REC activities have no sig relationship with LOS, but that perhaps structured AER and REC activities may be valuable in helping P-T alcoholics deal with problems of depression, hypertension, anxiety, weight control and low self-esteem.

358. FINGER, S.K. Long-term physiological effects of the cardiac rehabilitation unit of the La Crosse Exercise Program on its participants. M.S. in Adult Fitness-Cardiac Rehabilitation, 1985, (K. L. Wood)

Post-MI and CABG patients in the Cardiac Rehabilitation Unit of the La Crosse Exercise Program (n=76) were studied to determine the long-term (5 yrs) physiological effects of aerobic training. The Ss' physiological changes were measured following 6 mo, 1, 2, 3, 4, and 5 yrs. Patient compliance was divided into 2 levels: Group 1 - 59% or less; Group 2 - 76% or greater regular attendance. The physiological parameters examined included resting heart rate (RHR), submax heart rate (subHR), resting blood pressure (BP), body weight (wt), and maximal MET level (maxMET). The Ss trained for 3x/wk for a minimum of 20 min at an intensity of 60 to 85% max HR reserve. Sig changes ($p < .05$) in RHR, SBP, wt, and maxMET values were observed in Group 1. No sig ($p < .05$) changes were noted in DBP values in Group 1. Group 2 had sig ($p < .05$) reduced subHR values. No sig ($p < .05$) changes were observed in RHR, SBP, DBP, and maxMET in Group 2. Sig ($p < .05$) wt increase was evident in Group 2. Groups 1 and 2 showed sig ($p < .05$) diff in wt following 6 mo, 1, 2, and 3 yrs. Sig ($p < .05$) diff were found in subHR, maxMET, and DBP between groups. It was concluded that the Cardiac Rehabilitation Unit of the La Crosse Exercise Program improved/maintained cardiovascular fitness in its participants.

359. GILLIGAN, W.J. One-year followup evaluation of the St. Francis Employee Fitness Program. M.S. in Adult Fitness/Cardiac Rehabilitation, 1985, 114 p. (L.K. Hall)

The purpose of the present study was to review the effectiveness of the St. Francis employee fitness program after a year with regard to the physical and psychological benefits to its participants. Active compliers (AC, N=30), and active non-compliers (ANC, N=18), completed a questionnaire: daily living habits including smoking, drinking, nutrition, and stress; attitudes about various activities; and, self-perception of work productivity since the time of the initial health assessment. In addition, the AC answered questions dealing with their attitudes about the various programs offered within the St. Francis program. There were no sig diff ($p < .01$) between groups with regard to the initial health assessment, each of the daily living habits, attitudes about activities and self-perception of work productivity since the time of the initial assessment.

360. GRALL, R.C. The identification and description of municipal park/recreation department sponsored adult softball programs. M.S. in Recreation, 1985, 106 p. (P.Trokan)

In general, this nationwide study identified and described municipal park/recreation department sponsored adult softball programs implemented within incorporated places ranging from 45,000 - 55,000 in population. Each site, identified as a municipal park and/or recreation department which sponsored adult softball (n=58), and designated region (n=9) were examined for uniqueness, or conversely, similarity in responses in relation to the other sites/regions. In addition to structured question responses, any notes, comments, or questions cited by the respondents in reference to the study were utilized.

361. HENRY, E.A. Relationship of swim, cycle, and run max VO_2 and performance times in a triathlon. M.S. in Adult Fitness/Cardiac Rehabilitation, 1985, 68 p. (N.K. Butts)

Recreational triathletes, (16 male and 7 female,) ages 19 to 32, randomly performed max tethered swim (TS), bicycle ergometer (BE), and treadmill run (TR) tests prior to participation in a competitive triathlon (0.57 mi swim, 24.8 mi cycle, 6.2 mi run). Max physiological responses were analyzed using 2 way mixed design ANOVA with repeated measures.

	MaxVO_2 (L/min^2)			MaxVO_2 (ml/kg/min)		
	F	M	Total	F	M	Total
TR	3.08	4.56	4.11	50.7	62.0	58.6
BE	2.94	4.14	3.78	48.2	56.5	54.0
TS	2.71	3.77	3.45	45.3	51.5	49.6

Males attained sig ($p < .001$) higher absolute and sig ($p < .01$) higher relative max VO_2 values than females. Absolute and relative male TR maxVO_2 values were sig ($p < .01$) greater than BE and TS values, and BE values were sig ($p < .01$) greater than TS values. Relative female maxVO_2 values showed similar relationships. Triathletes attained TS, BE, and TR maxVO_2 values similar to those for trained athletes in each sport. Absolute TS max VO_2 was sig ($p < .05$) but moderately ($r=0.49$)

correlated to swim time. Relative BE and TR maxVO_2 values were sig ($p < .001$) correlated to associated segmental times ($r=-0.78$ and $r=0.84$, respectively), and absolute BE maxVO_2 was sig ($p < .01$) correlated to cycle time ($r=-0.57$). Relative TS, BE, and TR maxVO_2 values were sig ($p < .001$) correlated with total time ($r=-0.71$, $r=-0.85$, and $r=-0.81$, respectively). It was concluded that absolute and relative BE and relative TR maxVO_2 values were good indicators of respective performance times in a triathlon. Absolute TS maxVO_2 was only a moderate indicator of swim performance time, suggesting sig influence of other factors (i.e., technique) on swim performance.

362. JANISZEWSKI, R. Effectiveness of parent-child interaction in a family-oriented hypertension program. M.S. in Community Health Education, 1985, 114 p. (G.D. Gilmore)

A hypertension education and screening program for parents was developed for use in conjunction with the American Heart Association of WI's adolescent hypertension program. 59 adolescents and their parents were randomly assigned to 2 treatment groups and a control. Changes in knowledge, attitude, and behavior were measured by a pretest and posttest developed by a researcher. Sig ($p < .05$) diff were found among fathers in both treatment groups and the control. Adolescents in the education and screening group had a greater diff in attitude than the control. Adolescents in the screening group had a greater diff in behavior than the control. Future parent programs need to be developed which increase parent-child interactions which will impact on the development of both positive health attitudes and behavior.

363. KELLER, M.J. Survey of morbidity and mortality associated with discharge graded exercise testing. M.S. in Adult Fitness/Cardiac Rehabilitation, 1985, 76 p. (L.K. Hall)

33 hospitals return questionnaires regarding the completion of discharge GXT performed 2-3 wks following a cardiac event. In terms of prevalence of the hospitals performed the test for MI patients, 42.4% performed the test for bypass surgery patients, 63% performed it for both infarction and bypass surgery patients, and 45.5% performed it for angioplasty patients. In terms of morbidity and mortality, there were 4 morbid events and 2 sudden deaths during a total of 14,746 tests performed. This yielded a morbidity rate of 0.027% and a mortality rate of 0.014%.

364. KREUN, T.J. Prediction of peak VO_2 values from 9-minute run distances in young females, 9-14 years. M.S. in Adult Fitness-Cardiac Rehabilitation, 1985, 83 p. (N.K. Butts)

23 young females (X=11.9 yrs) were studied to determine if a relationship existed between peak VO_2 and 9-min run distance. Physical characteristics for all Ss included ht, wt, density, and % fat. A 9-min run for distance was performed, and VEmax, RER, HRmax, and peak VO_2 (ml·kg·min and l·min) were measured from volitional peak treadmill performance using the Bruce (1971) protocol. A multiple regression technique was used to predict peak VO_2 from 9-min distance, resulting in r=0.59 and r=0.80 when 9-min run alone was correlated with peak VO_2 in ml·kg·min and body density were used in the regression to improve the R. Two equations using wt with 9-min run distance predicted peak VO_2 with the most accuracy and practicality in ml·kg·min (R=0.66) and l·min (R=0.95).

365. KYLLO, C.A. A comparison of the arrhythmias occurring during an exercise test to those occurring during two monitored phase III and IV cardiac rehabilitation exercise sessions. M.S. in Adult Fitness and Cardiac Rehabilitation, 1985, 62 p. (L.K. Hall)

Following a routine GXT, 13 Ss were ambulatory monitored during 2 typical exercise sessions in order to compare the arrhythmias that occurred in the test and the exercise sessions. The t-test revealed no sig diff ($p \leq .01$) between the number of arrhythmias occurring during the exercise sessions. The Chi-square test revealed no sig diff ($p < .01$) in the test to the number of Ss exhibiting arrhythmias in the exercise sessions. No sig diff ($p < .01$) was found between the no. of arrhythmias occuring in each of the exercise sessions or between the number of Ss exhibiting arrhythmias in each of the exercise sessions. A sig relationship (r=0.84) was found between the number of arrhythmias occuring in each of the exercise sessions.

366. LADAY, C.D. An assessment of the La Crosse Exercise Program Adult Fitness Unit in relation to the risk of CHD based on the LDL/HDL ratio. M.S. in Adult Fitness/Cardiac Rehabilitation, 1985, 105 p. (K.L. Wood)

Blood lipid and lipoprotein values of 30 nonsmoking male participants in the Adult Fitness Unit (AFU) of the La Crosse Exercise Program (LEP) were assessed to determine the program

effectiveness in reducing the risk of CHD. Blood samples were analyzed for total cholesterol, triglyceride, high density lipoprotein (HDL), and low density lipoprotein (LDL). A Health History-Physical Activity-Nutritional questionnaire was also completed. Ss were divided into three groups based on running mileage and attendance to LEP: 1-run 10 mi/wk with at least a 70% attendance; 2-run <10 mi/wk with at least a 70% attendance, and 3- <50% attendance. No sig ($p < .05$) diff in blood components was observed among any of the groups. Group 1 indicated they consumed less fat than Group 3, although there was no diff in their absolute total cholesterol values. There was no sig ($p < .05$) diff in the LDL/HDL ratio among groups. It appears from this investigation that participants who run less than 10 mi/wk can maintain an LDL/HDL ratio that is indicative of a reduced risk of CHD.

367. MARTIN, L.A. Thermal responses in spinal cord injured athletes during prolonged submaximal wheelchair exercise. M.S. in Adult Fitness/Cardiac Rehabilitation, 1985, 163 p. (K. Wood)

5 male and 1 female paraplegic with spinal lesions from T-4 to L-1, 2 volunteered to perform a VO_2 max wheelchair exercise test and a 30 min submax (60-85% VO_2 max) test while skin (Ts) and rectal temp (Tr) were measured. Moderate air-flow was provided during all tests. Ss exercised in their wheelchairs on a specially constructed ergometer, HR, VO_2 max, and V_E were recorded. The mean VO_2 max was 27.4 ml/kg/min with a mean V_E max and HR max of 97.1 L/min and 178 + 7.0 bpm respectively. Tr followed similar patterns of response during and post-exercise in all Ss as reported in the literature on able-bodied persons. Ts response patterns varied according to the body area above and below the level of spinal lesion during exercise and recovery. It was concluded that paraplegics (T-4 to L-1,2) can exercise for 30 min at less than a mean exercise intensity of 85% VO_2 max during environmental conditions as described in this study without adverse thermal effects.

368. MARTIN, S.E. Jazzercise as a training mode in women. M.S. in Adult Fitness-Cardiac Rehabilitation, 1985, (N.K. Butts)

21 female Ss (18-33 yrs) participated in either a 2-day (n=5) or a 3-day (N=16) Jazzercise program for 7 wks to determine if Jazzercise training would elicit changes in max VO_2 and body composition. Ss were given pre (T_1) and post (T_2) max VO_2

tests using the Modified Astrand Protocol and were hydrostatically weighed. A target HR of 75% of age-predicted MHR was assigned and the THRs were recorded. The 2 and 3 day groups worked at an average intensity of 78.8% and 77.3%, respectively. A mixed design 2 way ANOVA was used to analyze the following variables: body wt, % body fat, R, max VO_2 (l/min and ml/kg/min), treadmill run time, max V_E, and MHR. Sig ($p < .05$) increases were found for both groups for maxVO_2 (l/min^{-1} and $ml/kg/min^{-1}$). Sig ($p < .05$) decreases were found for both groups for % body fat. There were no sig ($p > .05$) changes for either group for all other variables with the exception of a sig ($p < .05$) increase in V_EVO_2 for the 3-day group. There were no sig ($p > .05$) interactions between groups for all variables with the exception of V_E/VO_2. It was concluded that participation in Jazzercise either 2 or 3/wk is effective for producing positive body composition and cardiovascular responses.

369. MCCURRY, D. The effects of a seven-week isokinetic training program on eccentric strength development. M.S. in Adult Fitness/Cardiac Rehabilitation, 1985, 72 p. (P.K. Wilson)

This study examined the effects of a 7 wk eccentric isokinetic training program (60°/sec) on peak torque (PT), total work (TW) and peak torque/body weight (PT/BW) of the knee extensors. 31 men and women from the University of Wisconsin-La Crosse PE and PT classes were tested for strength on the KIN-COM at 60°/sec and 180°/sec, pre and post a 7 wk training program. The experimental group (20 Ss) performed 3 sets of 10 reps of eccentric knee extensions at 60°/sec 3 times a wk for 7 wks. The control group consisted of 11 Ss. There was a sig increase ($p < .05$) in PT, TW, and PT/BW when tested at 60°/sec. When tested at 180°/sec, there was a sig increase in PT and PT/BW but not in TW. It was concluded that an eccentric training program at 60°/sec causes an increase in PT, TW, and PT/BW when tested at 60° sec. When tested at 180°/sec, an eccentric training program at 60°/sec causes an increase in PT and PT/BW but not in TW.

370. OLSON, L.S. The effects of video game tournament play on the levels of morale of geriatric residents in a nursing home setting. M.S. in Therapeutic Recreation, 1985. (T. Gushiken)

A Pac-Man tournament was implemented to evaluate the effects of

video game tournament play on the levels of morale of geriatric residents at Bethany-St. Joseph Care Center. The experimental group (n=20) participated in the video game tournament play which consisted of daily pac-man play on 19 consecutive weekdays. The remaining 20 Ss comprised the control group and did not participate in the tournament play. Pre and post experiment morale levels were measured by the Philadelphia Geriatric Center (PGC) Morale Scale. Chi square analysis indicated a sig diff ($p < .05$), which indicates that a video game tournament can improve the morale of geriatric residents in a nursing home setting.

371. RADTKE, L.M. Perceived locus of control among substance abusing and non-substance abusing adolescents. M.S. in Community Health Education, 1985, 95 p. (R.D. Duquette)

Locus of control (LOC) beliefs among substance abusing adolescents (SAAs) and non-substance abusing adolescents (NSAAs) were explored through the use of a generalized measure of LOC - The Nowicki-Strickland Locus of Control Scale for Children (CNS-IE), and a specific measure of LOC beliefs about chemical using situations - the Chemical - Use Related Locus of Control Scale (CUIE). A 100-item questionnaire which included personal background data, a chemical use patterns questionnaire, and the NSC-IE and CUIE scales, were administered to 26 (8 female) SAAs who were patients of an adolescent substance abuse treatment program and to 68 (43 female) NSAAs who were SHS students. A sig relationship ($r = .56$; $p < .001$) was found between CNS-IE and CUIE scores of SAAs, suggesting that the more external SAAs were in their generalized LOC beliefs, the more external they were in their chemical-using specific LOC beliefs. A sig relationship ($r = .21$; $p < .05$) was found between CNS-IE and CUIE scores of NSAAs. The possibility that this relationship was influenced by factors other than level of chemical use could not be ruled out. It may be that those NSAAs who scored more externally on the LOC scales were more susceptible to developing substance abuse problems, thorough support for this suggestion needs to be researched. No sig diff was found between SAAs and NSAAs on the CNS-IE scale. The SAA group was sig more external in their chemical using-specific LOC beliefs than the NSAA group ($p = .001$), which further supported the importance of using both generalized and situation specific LOC instruments in measuring LOC beliefs in specific situations or populations.

372. ROGERS, D.P. The development of a manual on cardiovascular medications for use in cardiac rehabilitation programs. M.S. in Cardiac Rehabilitation/Adult Fitness, 1985, 359 p. (L.K. Hall)

A manual was developed to provide cardiac exercise therapists with an easy to use yet comprehensive reference on cardiovascular drug therapy. Accordingly, particular emphasis has been placed on identifying the effects of cardiac drugs on exercise performance and ECG changes that may be elicited by these agents. Specially, the emphasis of this manual is centered in 5 areas: indications for usage; mechanisms of action; effects of exercise performance; effects on the ECG; and, side effects. The manual has been reviewed by a Clinical Pharmacist, a Cardiologist, an Exercise Physiologist, and other professionals outside the field of cardiac rehabilitation, and deemed comprehensive, accurate, and effective in its delivery of information.

373. RAVENSCRAFT, D.H. Health promotion in Family Practice: A survey of selected practices and opinions of family physicians in Wisconsin. M.S. in Adult Fitness/Cardiac Rehabilitation, 1985, 106 p. (P.K. Wilson)

This study assessed the types of health promotion (HP) services offered in Family Practice clinics in WI as well as the HP opinions of family physicians (FP) in these clinics. 150 FP were randomly selected from a list of 733 FP in WI and questionnaires were delivered to 136 FP deemed eligible for participation in the study. 87 FP (64%) returned useable questionnaires. Of the 20 HP services included on the questionnaire, the most frequently offered were wt control counseling, dietary counseling, smoking cessation, preventive health screening, and cardiovascular risk factor assessment. No relationship was found between HP score and FP demographic data. Most FP (84%) believed their medical practice was HP oriented.

374. RUFF, J.E. Myocardial Infarction Patients: A comparison between supervised and unsupervised Phase II cardiac rehabilitation. M.S. in Adult Fitness/Cardiac Rehabilitation, 1985, 108 p. (P.K. Wilson)

This study compared attained MET levels, HR, BP and RPP of MI patients participating in a supervised and unsupervised Phase II cardiac rehabilitation program. The comparison was based on

patients' performance at a pre-discharge low-level graded exercise test an 8-wk post discharge symptom-limited exercise test. Submax data were gathered at a predetermined workload of 4.6 METS for the pre to post test comparison. Max data were gathered from the symptom-limited exercise test. Submax data were gathered at a predetermined workload of 4.6 METS for the pre to post test comparison. Max data were gathered from the symptom-limited graded exercise test. 18 patients made up the supervised group and 14 patients were in the unsupervised group. The supervised group attained a sig higher MET capacity ($p < .05$) when compared to the unsupervised group at the 8-wk treadmill test. Submax HR and RPP ($p < .05$) products decreased sig for both groups. Max MET levels, HR, and RPP ($p < .05$) increased. Max systolic BP ($p < .05$) increased in the supervised group. It was concluded that the supervised group was a more effective Phase II rehabilitation program based on the increased MET capacity elicited by the participants. Both groups demonstrated healing and "training effects" during the treatment period as indicated by a decrease in submax HR and RPP pressure products. The greater workload imposed at the 8-wk treadmill test resulted in an increase in the max cardiovascular parameters.

375. DUELAND, J.A. Return to work in myocardial infarction and/or coronary artery bypass patients. M.S. in Adult Fitness/Cardiac Rehabilitation, 1985, 103 p. (K. Wood)

This study observed return to work (RTW) in 115 male patients (< age 60) hospitalized for MI and/or CABG at La Crosse Lutheran Hospital, La Crosse, WI between 1/81 and 12/82. Work status information was obtained through a questionnaire. Heart rate ratio (HR), rate pressure product ratio (RPP), and METS were examined from the 8 sympton limited graded exercise test (SL-GXT). Catheterization results (pre CABG or post MI) investigated included ejection fraction (EF) and cardiac index (CI). Also, the age of the S and job difficulty before and after hospitalization based on the McCroskeys' Vocational Quotient System were examined. Diff RTW groups were those patients who returned at 3 mo (Group 1), 6 mo (Group 2), and failure to RTW (Group 3). RTW was 70% after 3 mo, 85% after 6 mo, 89% after 1 yr, and 86% after 3 to 4 yrs. Sig diff in RPP ratio for those Ss who RTW 6 mo vs those who failed to RTW and in METS for those Ss who RTW at 3 or 6 mo vs those who failed to RTW were found. Other variables revealed no sig diff. THe following variables were found to be correlated ($p \leq .05$); age with HP and RPP; HR with RPP and METS; RPP with METS; and, METS

with CI, thus it was concluded that selected results of the 8 wk post discharge SL-GXT may provide valuable information in determining RTW in cardiac patients.

376. SIEFKAS, J.J. The relationship between the effectiveness at relaxing and preferred learning mode. M.S. in Health Education, 1985, 120 p. (K.C. Becker)

The MBTI was administered to 9 male and 38 female students, and the Ss were categorized according to the 16 types of the MBTI type chart. Ss were divided into two groups: Sensors or Intuitives, and 4 experimental groups were formed: Sensors taught a Sensor technique, Sensors taught an Intuitive technique, Intuitives taught a Sensors technique, and Intuitives taught an Intuitive technique. A control group with an equal number of Intuitives and Sensors was not taught a technique until after the relaxation assessment. Effectiveness at relaxation was assessed using EMG measurements of muscle tension in the right forearm and the skin thermal measurements of the right middle finger after Ss had practiced a relaxation technique for a month. Results indicated that Ss were more effective at relaxing when taught a relaxation technique that was opposite their preferred mode of learning (S or N) and those who preferred to learn in the Sensor mode were more effective at relaxing when taught an Intuitive relaxation technique.

377. SURMAN, C.F., III. The difference in unsupervised exercise patterns between compliant and non-compliant La Crosse Exercise Program Adult Fitness Unit (LEP-AFU) participants. M.S. in Adult Fitness/Cardiac Rehabilitation, 1985, 47 p. (W. Kaufman)

21 males and 2 females were classified as compliant if their attendance rates to the LEP-AFU were greater than or equal to 75%. Ss were classified as non-compliant if their attendance rates to the LEP-AFU were less than or equal to 55%. A total compliant and 9 non-compliant Ss participated. An account of unsupervised physical activity was developed by this researcher to evaluate activity of the LEP-AFU Ss outside the supervised program. Specific components of the account were type of activity, frequency, intensity and duration. There were no diff ($p > .05$) between groups. The most common activities chosen were running, walking and domestic chores such as snow shoveling and wood cutting.

378. TOWNSEND, R.F. Stress testing peripheral vascular disease patients: a physiological comparison between the Bruce protocol and an Intermittent protocol. M.S. in Adult Fitness/Cardiac Rehabilitation, 1985, 226 p. (K. Wood)

In an attempt to evaluate coronary artery disease (CAD), functional aerobic capacity and exercise prescription in peripheral vascular disease (PVD) patients, 6 max physiological parameters were compared between a continuous and an Intermittent protocol. The continuous GXT was the standard BRUCE test initiated with a 3-min warm-up of 1.7 mph and a 5% grade. The Intermittent procedure consisted of 2-min stages with a 1-min rest periods between them and was developed specifically for this population. The stages progressed as follows: 2.75 mph and a 0% grade; 3.0 mph and a 4% grade; 3.5 mph and a 7% grade; 3.75 mph and a 10% grade; and 4.25 mph and a 13% grade. 5 male patients with documented PBD, 69 yrs, performed each GXT. Individual data analysis through a case study approach compared max estimated METs, HR, BP (RPP), RPE, and claudication pain between protocols. The Intermittent protocol indicate a trend toward increased MET values, though HR were comparable to the Bruce test. Both protocols appeared to stress the heart similarly in terms of assessing the ECG for CAD. RPE and cludication pain were not always perceived appropriately for either test. No trends were noted in regard to BP and RPP. It was concluded that the Intermittent protocol could be an appropriate means for testing PVD patients in an intermediate disease state, who can achieve a moderate MET level.

379. TWEED, R.D. Effect of water-soluble plant fiber on serum cholesterol and HDL values in cardiac rehabilitation participants. M.S. in Adult Fitness/Cardiac Rehabilitation, 1985, 114 p. (P.K. Wilson)

The total effect on increased dietary fiber (DB) in the form of leguminous bans on serum lipid values including total cholesterol (TC), a high-density lipoprotein (HDL), and the TC: HDL ratio were studied in control (n=14) and experimental (n=14) groups who were nonrandomly assigned volunteers from the Cardiac Rehabilitation Unit of the La Crosse Exerise Program, University of Wisconsin-La Crosse, La Crosse, WI. Blood samples and 24-hr dietary recall forms were collected for the pretest and posttest data. Treatment Ss attended 3 1-hr presen-

tations of DF benefits and how to impliment the "bean" diet. Ss ate 3 cups cooked beans/wk for an 8-wk period. Results of the ANCOVA procedures revealed no sig diff ($p > .05$) between group membership and TC, HDL, TC:HDL, of DF intake values. Stricter dietary requirements, random assignment, and selecting only hypercholesterolemic Ss are recommended for future study.

380. VAN LAARHOVEN, R.J. The effects of a music stimulus on heart rate, blood pressure, VO_2, duration, and perceived exertion of performance at submaximal. M.S. in Adult Fitness and Cardiac Rehabilitation, 1985, 51 p. (P.K. Wilson)

11 females & 14 males randomly completed 3 submax exercises: fast tempo, slow tempo, or no music. There was no sig diff ($p < .05$) in BP among groups. Sig diff was indicated for duration as determined by HR response, oxygen uptake with relation to duration and perceived exertion. Sig at the ($p < .05$) level showed that while Ss listened to slow tempo music, Ss exercised longer and had a lower VO_2 during the slow tempo test ($p < .05$) and perceived the exercise test easier while listening to either fast or slow tempo music.

381. WINBERG, N.A. The motivational factors of adult working women who exercise at the Scandia Spa in La Crosse. M.S. in Health Education, 1985, 77 p. (K. Becker)

A questionnaire was administered to 119 Ss at the Scandia Spa concerning motivational factors that influence them to participate in an exercise program. Ages, regularity of exercise, and levels of group participation were variables that were tested to determine relationships of diff these had on motivational factors and the S's exercise program. There was no correlation ($p > .05$) between age and regularity. Furthermore the results indicate that the motivational factors had no value in predicting age nor regularity of Ss. There was value in the motivational factors being able to discriminate levels of group participation. This is helpful for fitness instructors to help choose best types of exercise for individuals, as well as implement programs on motivational factors in efforts to keep individuals enthused and motivated concerning their exercise program.

WEST VIRGINIA UNIVERSITY (A. Ostrow)

382. BERKEY, D. An examination of the effect(s) of specified teacher behaviors on student ALT-PE. Ed.D. in Physical Education, 1985, 122 p. (R. Wiegand).

383. DZEWALTOWSKI, D. The effect of aerobic exercise on information processing in older adults. M.S. in Physical Education, 1985, 144 p. (A. Ostrow).

384. HAMMERSMITH, V. The development of a survey instrument to profile donors to athletics. Ed.D. in Physical Education, 1985, 235 p. (P. Fehl).

385. HIRLOCK, B. The International Council for Health, Physical Education and Recreation: The first twenty-six years. Ed.D. in Physical Education, 1985, 370 p. (C. Bahneman).

386. HOPEWELL, R. The effect of a high protein diet, a high polyunsaturated fat diet, and a diet that contains MCT oil on exercise tolerance of an individual with McArdle's disease. M.S. in Physical Education, 1985, 102 p. (R. Yeater).

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